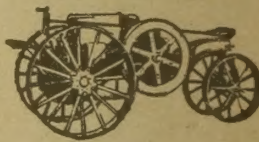
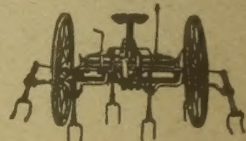
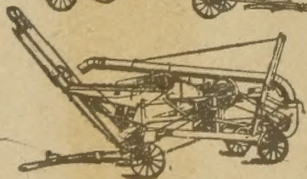
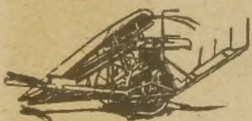
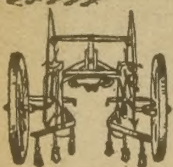
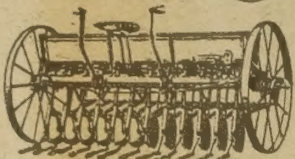
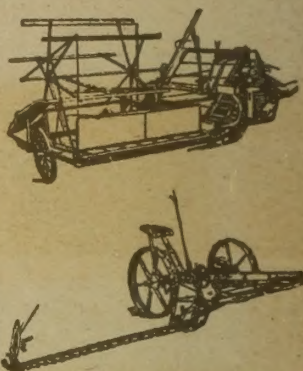


INTERNATIONAL HARVESTER ALMANAC





THE I H C LINE

GRAIN MACHINES

BINDERS
REAPERS

HAY MACHINES

MOWERS
RAKES
TEDDERS
SIDE DELIVERY RAKES
HAY LOADERS
HAY PRESSES
SWEEP RAKES
STACKERS

CORN MACHINES

BINDERS
PLANTERS
ENSILAGE CUTTERS
SHELLERS
CULTIVATORS
HUSKERS AND SHREDDERS

TILLAGE

DISK HARROWS
CULTIVATORS
SPRING-TOOTH HARROWS
PEG TOOTH HARROWS
PLOW
SCUFFLERS
TRACTOR PLOW
TRACTOR DISK HARROWS
LAND ROLLERS
LAND PACKERS

GENERAL

GRAIN DRILLS
SEEDERS
CREAM SEPARATORS
OIL AND GAS ENGINES
MANURE SPREADERS
OIL TRACTORS
THRESHERS
FARM WAGONS
AND TRUCKS
DEMOCRATS
BOB SLEIGHS
MOTOR TRUCKS
FEED GRINDERS
FEED CRUSHERS
BINDER TWINE
KNIFE GRINDERS

Write nearest Branch House
of the International Harvester
Co. of Canada, Ltd., for Cata-
logues.

Branch Houses

Brandon, Man.; Calgary,
Alta.; Edmonton, Alta.; Est-
van, Sask.; Lethbridge, Alta.;
N. Battleford, Sask.; Regina,
Sask.; Saskatoon, Sask.; Win-
nipeg, Man.; Yorkton, Sask.;
Hamilton, Ont.; London, Ont.;
Montreal, Que.; Ottawa, Ont.;
Quebec, Que.; St. John, N. B.

INTERNATIONAL HARVESTER ALMANAC

1917



The object of this almanac is to serve as a handy and ready reference for facts, tables, and general information. We hope it will prove of value and service to the farmer and his family.

No doubt you are keeping previous issues for future reference. Hang this almanac up with the others.

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INTERNATIONAL HARVESTER COMPANY OF CANADA,
LIMITED

See the opposite page or inside back cover for branch houses.

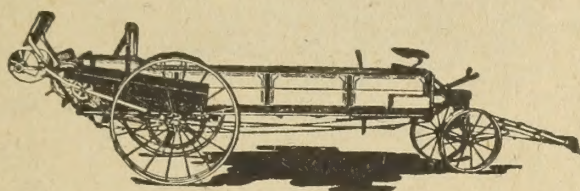
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GIVE EVERY PLANT A SQUARE MEAL

The new Deering and McCormick spreaders have the improvements and features that make them one of the most valuable machines a farmer can buy. They will help you get more returns from the manure because they spread it properly. Properly spread means more than simply throwing the manure on the ground. It means pulverizing the lumps, tearing up the straw and spreading an even coat, thick or thin as you may desire.

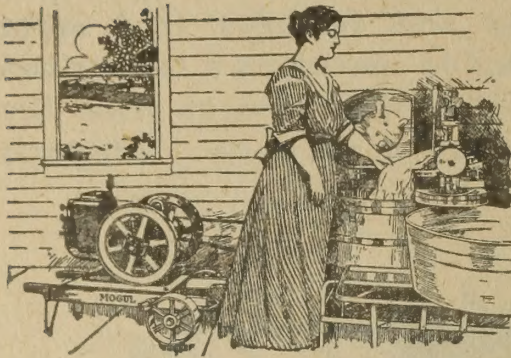


Illust. 4. Spreads the International Way—
Wide and Evenly

The wide spread feature has many advantages—the same area can be covered by traveling a shorter distance—helps to cover all the ground when top dressing—permits use of narrow box, which enables driving spreader directly into stable—wheels always travel on unmanured ground.

International spreaders are also well known because of their high class construction throughout—they are low down, which saves work—angle steel frame trussed and braced with steel—fifth wheel provides for surface irregularities and permits load to ride evenly—pull is direct from frame of spreader, no excessive tongue lashing—return or endless apron—high steel wheels furnish abundant tractive power—hard oil cups supplied—has wooden roller for crushing lumps and leveling load—gearing protected by steel case—spreader keeps working while making turns—has heavy steel axle—has three rates of feed—apron made of well seasoned wood slats which run on iron rollers—beater properly placed—has rear axle roller bearings—can be used for spreading lime—made in sizes to suit varying conditions.

AN EGG FOR AN HOUR'S WORK



Illust. 5. "It is really a pleasure to wash when you have a Mogul engine"

Someone has said that "Headwork lightens Housework." No doubt the statement is true. We will take it for granted that you are anxious to get your heavy housework—washing, churning, pumping, etc., done in the easiest and best way.

Has the expense of an engine kept you from using one? A Mogul 1-H. P. kerosene engine will develop 1-H. P. for an hour on about one pint of kerosene. The average cost of kerosene over the country is about eight cents a gallon—one cent a pint. There you have an hour's work for about a cent's worth of fuel.

The United States Year Book, Department of Agriculture, shows that the average price of eggs for the past year on the farm was nearly twenty-four cents per dozen, or about two cents each. There you have it. A Mogul kerosene engine will run your washer or pump, etc., an hour for the price of an egg. Can you afford to do your heavy housework by hand for that small amount? Let a Mogul lighten your housework.

Mogul kerosene engines are made in sizes for every job on the farm. They are stationary, skidded, mounting, portable, hopper or tank-cooled.

Drop us a postal card for catalogue and we will tell you where you can see a Mogul engine.

SAVE THE CREAM AND SAVE YOUR STRENGTH

Do you still set cream in pans and crocks? Then you probably don't realize how much cream you are losing or how much unnecessary work you are doing—you're "just used to it."

Think of the cream separator and what it will do for you! Even if you have only two or three cows, you will soon save enough cream to pay for it. And the 5 or 10 minutes spent in cleaning it you will find quite different from the half hour or more spent cleaning the crocks.

Let One of These Separators Take the Drudgery Out of Dairy Work and Put Good Profits In

My how easy it turns! You can stand or sit in a natural position, and once started you scarcely know you're working. Then too, by belting it to one of the engines, shown in this folder, the work can be reduced to practically nothing.

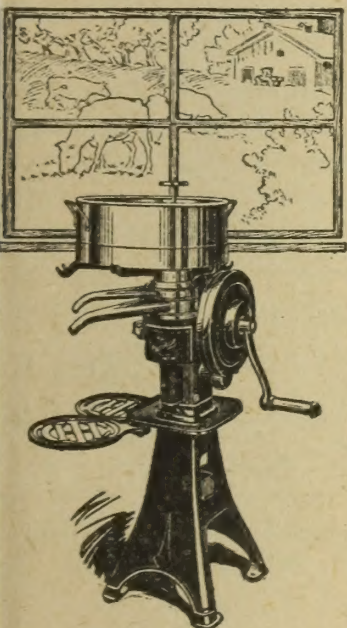
Both of these separators, Lily and Primrose, are well constructed. They are of the disk type of separator—the most efficient and most durable skimming mechanism known. They are easily cleaned, oil themselves by the spray system, are easy to fill and turn, and they get **all the cream**. They are sold in four Imp. sizes:

No. 1,	Capacity	350 lbs.—	33.4 Gal. per Hour
No. 2,	"	450 " —	42.5 " " "
No. 3,	"	650 " —	63.7 " " "
No. 4,	"	850 " —	82.3 " " "

Send for one of our illustrated separator catalogues, and we will tell you where you can see these machines.

The attachments for direct belting are sold as extras.

By belting to a shaft the engine can be used to operate other machines.



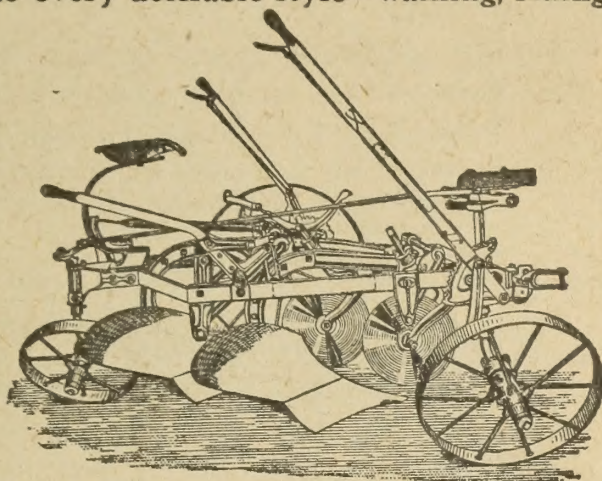
Illust. 6. Primrose and Lily Cream Separators Operated by hand or engine

Let Us Hear From You—Use the Post Card Enclosed in the Almanac

THE RIGHT PLOW FOR YOUR NEEDS

Oliver and Hamilton plows are especially designed for Canada. These lines include every desirable style—walking, riding and tractor. They have unusually strong beams and standards and are built throughout to stand Canadian conditions.

Oliver and Hamilton plows have every adjustment found on other plows and many exclusive ones. In addition, these adjustments are more close and exact than those found elsewhere, enabling you to adjust the plow to do the best work under any conditions. Ask for catalogue and complete information.



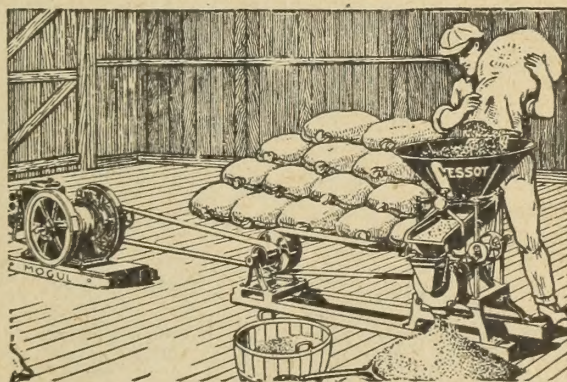
Oliver No. 1 Gang. Has a high throat and wide clearance between the bases to prevent choking

Save Money by Using a Vessot Feed Grinder

Bigger and bigger the feed grinder stands out on the list of machines the practical farmer cannot afford to do without.

VESSOT GRINDERS have stood the test for thirty years, they have been imitated but never surpassed or equaled. They are built in the largest exclusive grinder factory in Canada.

Perfection, durability and service are built in Vessot grinders. Light running, each part balanced separately on a taper grinding shaft. They are supplied with brass friction end thrust block, quick lever release and accurately balanced plates.



Vessot grinder plates. They help you get more for your feed are made of special materials which cause them to outlast all others and to do better work in grinding barley, corn, oats, wheat, peas, light buckwheat gleanings, flax and all kinds of mixed grain. They are being imitated. Look for the "SV" stamp on the genuine.

Vessot oat rollers also have a reputation equal to Vessot grinders.

Vessot grinders are made in the following sizes: Farm grinders 6½ inches, 8 inches, 9 inches, 9½ inches, 10½ inches and 11 inches. Mill grinders 11 inches, 13 inches and 15 inches. 6½ inch grinders can be run by a 2½ H. P. Mogul or Titan Engine.

YOU ARE PROTECTED BY OUR WRITTEN WARRANTY

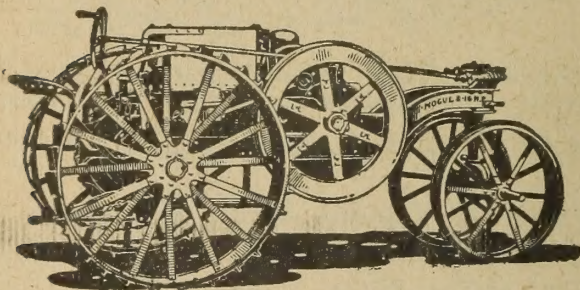
Farmers are buying Mogul kerosene tractors

Because they are built to operate on kerosene

Because they do operate successfully on kerosene

Because the Company guarantees them to operate on kerosene and makes this guarantee a part of the warranty on every order

The Mogul 8-16 is a practical, all-job tractor. It is suitable for the small farm and will do its share of work on the large one. It has won favor with its steady, long-lived, slow-speed motor

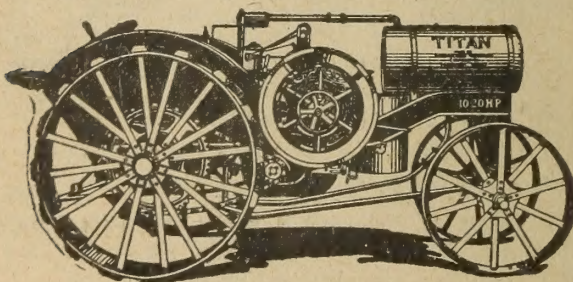


Illust. 1. Mogul 8-16 — A Two-Plow
Kerosene Tractor

and its record for economy in drawbar and belt work. It has a simple, safe and strong transmission with gears in a dust-proof case running in oil—flexible chain drive—fuel saving governor—simplest possible cooling system—magneto without batteries—an oiler that never forgets—

pull one lever to go forward, another backward. So simple that it is a pleasure to operate.

The Titan 10-20 has made satisfied owners in all sections of the country by the way it furnishes low cost power for all farm work. It is designed and built to meet the conditions on the farm. It has a simple, two-cylinder, vibrationless motor enclosed



Illust. 2. Titan 10-20 — A Three-Plow
Kerosene Tractor

from dust and dirt and fitted with the latest mechanical lubricator, magneto, etc.—all parts are readily accessible—it has two speeds ahead and one reverse—a chain drive to each rear wheel—the control levers are within easy reach. It is especially adapted to all kinds of field or

belt work and has adjustable drawbar—is throttle governed which prevents waste of fuel.

DEERING AND McCORMICK HARROWS ARE BUILT TO GIVE YOU SERVICE

These disk harrows have all the improvements that years of experience in building and use in the field have developed.

Frames are made of strong angle steel rigidly braced to give service under adverse conditions—most of the parts are of steel. They have four-wheel, long-life bearings—adjustable snubbing blocks that hold the gangs level at all cutting angles—gangs are independent of each other to make it possible to work on hillsides—adjustable steel scrapers keep the disks clean.



Illust. 3. Preparing for a Profitable Harvest

These harrows are provided with hard oilers that are easy to fill—levers are convenient—steel clevis hitch that can be adjusted up or down. Tongue truck furnished special.

You can get an International disk harrow to suit your wants from 4 feet to 8 feet wide with either 16 or 18-inch disks.

International spring-tooth harrows have teeth that cannot work loose and that can be set at any desired cutting depth—the tooth bars are of high grade steel to resist the twisting action of the teeth—runner shoes that take the wear off the frame—levers are substantial and easy to reach—riding sulky special equipment—has adjustable hitch—special alfalfa teeth can be supplied. Made in sizes with 15 to 23 teeth—4 feet 9 inches to 7 feet 3 inches wide.

International peg-tooth harrows are made of all steel that cannot check nor rot—the U-shaped steel tooth bars give greatest possible strength and hold the teeth in the position you place them by the handy adjustment levers—a long tooth at each corner acts as a runner and saves loading harrow on to wagon—the stiffening bars keep teeth at same cutting angle—can be equipped with light steel sulky, special.

INTERNATIONAL HARVESTER COMPANY OF CANADA, LIMITED
Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask. Lethbridge, Alta., North Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask., Hamilton, Ont., London, Ont., Montreal, P. Q., Ottawa, Ont., St. John. N. B., Quebec, P. Q.



Read one or more good Agricultural papers.

ASTRONOMICAL CALCULATIONS FOR CANADA FOR 1917

By J. T. SPARKMAN, McMinnville, Tenn.

ECLIPSES

1. A total eclipse of the moon, January 8, 1917, visible throughout Canada.
Begins 2:00 A. M.
Ends 3:29 A. M., Eastern Time.
2. A partial eclipse of the sun, June 19, 1917, visible in the Northwestern portions of Canada, as a small eclipse, occurring from 5 to 7 A. M.
3. A total eclipse of the moon, December 28, 1917, visible throughout Canada.
Begins 4:38 A. M. Ends 4:57 A. M., Eastern Time.

SEASONS, 1917

Spring begins March 20th, 11:38 p. m. (Eastern Time.)
Summer begins June 21st, 7:14 p. m.
Autumn begins Sept. 23rd, 10:01 a. m.
Winter begins Dec. 22nd, 4:46 a. m.

HOLIDAYS, CHURCH DAYS, ANNIVERSARIES, ETC.

New Year's Day (Circumcision).....	Jan. 1	Ember Days.....	May 30, June 1, 2
Epiphany (Twelfth Day).....	" 6	St. Barnabas.....	June 11
Lee's Birthday.....	" 19	Nativity of John the Baptist.....	" 24
Conversion of St. Paul.....	" 25	Saints Peter and Saul.....	" 29
Purification (B. V. M.).....	Feb. 2	Independence Day.....	July 4
Septuagesima Sunday.....	" 4	Mary Magdalene.....	" 22
Lincoln's Birthday.....	" 12	St. James.....	" 25
St. Valentine's Day.....	" 14	Transfiguration.....	Aug. 6
Quinquagesima (Shrove Sunday).....	" 18	Name of Jesus.....	" 7
Ash Wednesday.....	" 21	St. Bartholomew.....	" 24
Washington's Birthday.....	" 22	Labor Day.....	Sept. 3
First Sunday in Lent.....	" 25	Exaltation of Holy Cross.....	" 14
St. David's Day.....	Mar. 1	Ember Days.....	Sept. 19, 21, 22
Ember Days.....	Feb. 28, Mar. 2, 3	Day of Atonement (Yom Kippur).....	Sept. 26
St. Patrick's Day.....	Mar. 17	Michaelmas.....	" 29
Annunciation (Lady Day).....	" 25	First Day of Tabernacle.....	Oct. 1
Passion Sunday.....	" 25	St. Luke.....	" 18
Palm Sunday.....	April 1	Saints Simon and Jude.....	" 28
Good Friday.....	" 6	Halloween.....	" 31
First Day of Passover.....	" 7	All Saints Day.....	Nov. 1
Easter Sunday.....	" 8	All Souls Day.....	" 2
Low Sunday.....	" 15	Thanksgiving Day.....	" 29
St. George.....	" 23	St. Andrew.....	" 30
St. Mark.....	" 25	Advent Sunday.....	Dec. 2
St. Philip and St. James.....	May 1	Feast of Immaculate Conception.....	" 8
Rogation Sunday.....	" 13	Ember Days.....	Dec. 19, 21, 22
Ascension Day (Holy Thursday).....	" 17	St. Thomas.....	Dec. 21
Pentecost (Whit Sunday).....	" 27	Christmas Day.....	" 25
Decoration Day.....	" 30	St. Stephen.....	" 26
Trinity Sunday.....	June 3	St. John the Baptist.....	" 27



Loading hay in a hurry. Saving it while the weather is favorable. This outfit takes the drudgery out of hay making. We have a book on Tractor Hitches. Write for it.

CALENDAR 1917

☉ Full Moon

☾ Last Quarter

☾ New Moon

☾ First Quarter

JANUARY

S	M	T	W	T	F	S
	☾	2	3	4	5	6
7	☉	9	10	11	12	13
14	15	☾	17	18	19	20
21	22	☉	24	25	26	27
28	☾	30	31			

FEBRUARY

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18	19	20	☉	22	23	24
25	26	27	☾			

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11	12	13	14	15	☾	17
18	19	20	21	☉	23	24
25	26	27	28	29	☾	31

APRIL

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22	23	24	25	26	27	28
☾	30					

MAY

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27	☾	29	30	31		

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JULY

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29	30	31				

AUGUST

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12	13	14	15	16	☉	18
19	20	21	22	23	24	☾
26	27	28	29	30	31	

SEPTEMBER

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☉	17	18	19	20	21	22
☾	24	25	26	27	28	29
30						

OCTOBER

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☾	8	9	10	11	12	13
14	☉	16	17	18	19	20
21	22	☾	24	25	26	27
28	29	☉	31			

NOVEMBER

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11	12	13	☾	15	16	17
18	19	20	☉	22	23	24
25	26	27	☾	29	30	

DECEMBER

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9	10	11	12	13	☾	15
16	17	18	19	20	☉	22
23	24	25	26	27	☾	29
30	31					



Making the best possible use of valuable harvest time. No delays on hot days



Attend all farmers' institutes. You may get some new ideas

Weights and Measures Used in Canada

Cubic Measure

1,728.	cubic in. 1 cubic foot
27	cubic ft. 1 cubic yard
128	cubic ft. 1 cord (wood)
40	cubic ft. 1 ton (shipping)
2,218.19	cubic in. 1 standard bu.
277.27	cubic in. 1 Imperial gal.

Square Measure

144	square inches.....1 sq. foot
9	square feet.....1 sq. yard
30 $\frac{1}{4}$	square yards.....1 sq. rod
40	square rods.....1 rood
4	roods or 160 sq. rds..1 acre
640	acres.....1 sq. mile

Paper Measure

24 sheets	.....1 quire
20 quires	.....1 ream (480 sheets)
2 reams	.....1 bundle
5 bundles	.....1 bale

Troy Weight

24 grains	.....1 pwt.
20 pwts	.....1 ounce
12 ounces	.....1 pound

Used for weighing gold, silver and jewels.

Apothecaries' Weight

20 grains	.....1 scruple
3 scruples	.....1 dram
8 drams	.....1 ounce
12 ounces	.....1 pound

The oz. and lb. same as Troy Wt.

Time Measure

60 seconds	.....1 minute
60 minutes	.....1 hour
24 hours	.....1 day
7 days	.....1 week
28,29,30 or 31 days	.....1 calendar month
(30 days = 1 month in computing interest).	
365 days	.....1 year
366 days	.....1 leap year

Circular Measure

60 seconds	.....1 minute
60 minutes	.....1 degree
30 degrees	.....1 sign
90 degrees	.....1 quadrant
4 quadrants	.....12 signs
360 degrees	.....1 circle

Weights

1 gram	.....0.03527 ounces
1 Kilogram	.....2.2046 lbs.
1 metric ton	.....1.1023 English Tons

Avoirdupois Weight

27 $\frac{11}{32}$	grains.....1 dram
16	drams.....1 ounce
16	ounces.....1 pound
25	pounds.....1 quarter
4	quarters.....1 cwt.
2,000	pounds.....1 short ton
2,240	pounds.....1 long ton

Long Measure

12 inches	.....1 foot
3 feet	.....1 yard
5 $\frac{1}{2}$ yards or 16 $\frac{1}{2}$ feet	.....1 rod
40 rods	.....1 furlong
8 furlongs or 5280 ft.	.....1 statute mile
3 miles	.....1 league

Measures of Capacity

4 Gills	.....1 Pint
2 Pints	.....1 Quart
4 Quarts	.....1 Gallon
(277.274 cu. in.)	
4 Pecks (8 gals.)	.....1 Bushel
(1.2837 cu. feet)	
2 Bushels	.....1 Strike
3 Bushels	.....1 Sack
4 Bushels	.....1 Coomb
8 Bushels	.....1 Quarter
12 Sacks	.....1 Chaldron

Mariners' Measure

6 feet	.....1 fathom
120 fathoms	.....1 cable length
7 $\frac{1}{2}$ cable lengths	.....1 mile
5,280 feet	.....1 stat. mile
6,085 feet	.....1 naut. mile

Miscellaneous

4 inches	.....1 hand
18 inches	.....1 cubit
21.8 inches	.....1 bible cubit
2 $\frac{1}{2}$ feet	.....1 military pace

Surveyors' Measure

7.92 inches	.....1 link
25 links	.....1 rod
4 rods	.....1 chain
10 sq. chains or	
160 sq. rods	.....1 acre
640 acres	.....1 sq. mile or sect.
36 sq. miles	.....1 township

Approximate Metric Equivalents

1 decimeter	.....4 inches
1 meter	.....1.1 yards
1 kilometer	.....$\frac{5}{8}$ mile
1 hektar	.....2 $\frac{1}{2}$ acres
1 ster. or cubic meter	.....$\frac{1}{4}$ cord
1 liter 1.06 qts. liquid	.....0.9 qt. dry
1 hektoliter	.....2 $\frac{5}{8}$ bushels
1 kilogram	.....2 $\frac{1}{5}$ lbs.
1 metric ton	.....2,200 lbs.



Quantity of Seed To Sow Per Acre

The question of quantity of seed to sow per acre often arises. Specific directions are hard to give for all localities and conditions. The table shows the average practice and no doubt will serve to good advantage as a guide: *Cyclopedia of American Agriculture*, L. H. Bailey.

*Alfalfa.....	10-15 lbs.	Millet, Proso or Panicle (drills).....	2-3 pks.
Barley.....	8-10 pks.	Milo.....	5 lbs.
Barley and peas.....	1-2 bus. ea.	Oats.....	2-3 bus.
Bean, field (small varieties)	2- 3 pks.	Oats and peas.....	{ Oats 2 bus. Peas 1/2 bu.
Bean, field (large varieties)	5- 6 pks.		
Beet.....	4- 6 lbs.	*Onion.....	6 lbs.
Blue-grass (pure).....	25 lbs.	*Onion sets.....	12 bus.
Brome-grass (alone for hay).....	12-15 lbs.	Orchard grass (pure)....	12-15 lbs.
Broom-corn.....	3 pks.	Peanuts.....	1 bu.
Broom-corn (for seed)....	1 pk.	Potato, cut to 1 or 2 eyes	6-9 bus.
Buckwheat.....	3- 5 pks.	Pumpkin.....	4 lbs.
Bur-clover.....	12 lbs.	Rape (in drills).....	2-4 lbs.
Cabbage.....	3/4- 1 lb.	Rape (broadcast).....	4-8 lbs.
Carrots (for stock).....	4- 6 lbs.	Red-top (re-cleaned)....	12-15 lbs.
Clover, alsike (in spring wheat or rye).....	4-6 lbs.	Rice.....	1-3 bus.
Clover, Japan (lespedeza)	12 lbs.	Rutabaga.....	3-5 lbs.
Clover, red (in spring grain).....	8-14 lbs.	Rye (early).....	3-5 pks.
*Clover, sweet (melilotus)	15-18 lbs.	Rye (late).....	6-8 pks.
Clover, white.....	10-12 lbs.	Sorghum (forage, broadcast).....	1 1/2-2 bu.
Cotton.....	1- 3 bus.	Sorghum (for seed or syrup).....	2- 5 lbs.
Cowpea.....	1-1 1/2 bus.	Soybean (drills).....	2-3 pks.
Cowpea (in drill, with corn).....	1/2-1 bus.	Soybean (broadcast)....	1-1 1/2 bus.
Cowpea (for seed).....	3 pks.	*Squash.....	4-6 lbs.
Crimson clover.....	12-15 lbs.	Sugar beets.....	15-20 lbs.
Field-pea, (small varieties)	2 1/2 bus.	Sugar-cane.....	4 tons of cane
Field-pea (large varieties)	3-3 1/2 bus.	Sunflower.....	10-15 lbs.
Flax (for seed).....	2- 3 pks.	*Sweet-potato.....	about 6000 plants
Flax (for fiber).....	1 1/2-2 bus.	Timothy.....	15-25 lbs.
Hemp (broadcast).....	3 1/2-4 pks.	Timothy and clover.....	{ Timothy 10 lbs. clover 4 lbs.
Johnson-grass.....	1-1 1/2 bus.		
Kaffir (drills).....	3- 6 lbs.	Tobacco.....	about 4700 plants
Kaffir (for fodder).....	10-12 lbs.	*Tomato.....	1/4 lb.
Kale.....	2-4 lbs.	Turnip (broadcast).....	2-4 lbs.
*Lettuce.....	1 oz.	Turnip (drills).....	1 lb.
Mangels.....	5- 8 lbs.	Velvet bean.....	1-4 pks.
Meadow fescue.....	12-15 lbs.	Vetch, hairy (drilled)....	1 bu. and 1 bu. small grain
*Melon, musk.....	3 lbs.	Vetch, hairy (broadcast). 1 1/2 bus. and 1 bu. small grain	
*Melon, water.....	5 lbs.		
Millet, foxtail (drills)....	2-3 pks.	Wheat.....	6-9 pks.
Millet, German (seed)....	1 pk.		
Millet, Pearl (for hay)...	8-10 lbs.		

*Obtained from another reliable source.

Inneculation when applied to legumes means furnishing the particular kind of bacteria that lives in the roots of that legume. Sometimes these bacteria are supplied through liquid sprinkled on the seed and sometimes by use of a soil in which the same plant has recently grown successfully.



Definitions of Common Terms Worth Knowing

An element is a simple substance that cannot be divided. Iron, nitrogen carbon and oxygen are examples.

Plant food means the elements that are used by plants in their growth. The principal plant foods are nitrogen, phosphorus, potassium and calcium.

Available plant food. Many soils contain plant food, but it is not in such form as to be used by the plants. Drainage, mechanical condition and application of vegetable matter influences the amount of available plant food.

Nitrogen is an element that is very abundant in the air. It is plant food only when incorporated in the soil. When plants are pale, the leaves narrow and the stalks small, they indicate lack of soil nitrogen. Heavy foliage, rank growth and dark green color of plants indicate plenty of nitrogen in the soil.

Phosphoric acid is a substance used by plants, particularly in the development of seed. It is derived from phosphorus in the form of rock.

Potash is another substance containing potassium, that growing plants require, and that may be deficient in the soil. The largest part of this element is found in the stem or stalk.

Lime is a mineral substance that is frequently found lacking in soils. It is necessary to plant growth, particularly in legumes. The best way to apply lime is in the form of finely ground limestone.

Organic matter is material that goes to make up the growth of a plant or an animal. Bones, flesh, barnyard manure, plants, stubble, etc., are examples of organic matter.

Humus is a product of the decay of organic matter.

A sandy soil is one that contains a very high percentage of sand. Such a soil is not naturally very fertile and needs to be given a liberal supply of organic matter so that it can hold moisture and plant food.

A clay soil contains over fifty per cent of clay, and its particles stick to each other so tightly that it is difficult to cultivate, and drainage is poor. Organic matter and lime improve the condition of a clay soil.

A loamy soil is a mixture of sand and clay, and may vary from a sandy loam to a clay loam. Our best soils are usually loams. They contain enough sand to make them easily worked, and enough clay to enable them to hold moisture and plant food.

Legumes are plants that have nitrogen gathering bacteria in their roots. This bacteria gathers the nitrogen from the air in the soil. The nitrogen is stored in the roots and in other parts of the plant. All clovers, alfalfa, peas, beans, vetches, locust trees, etc., are legumes.

Balanced Ration is the feed or combination of feeds furnishing the several nutrients—crude protein, carbohydrates, and fat—in such proportion and amount as will properly and without excess of any nutrient nourish a given animal for 24 hours.—“Feeds and Feeding” by Henry.

Maintenance Ration is one that furnishes a sufficiency of each and all of the several nutrients, but no more than is required to maintain a given resting animal so that it will neither gain nor lose in weight.—“Feeds and Feeding” by Henry.

By Nutritive Ratio is meant the ratio which exists in any given feeding stuff between digestible crude protein and the combined digestible carbohydrates and fat.—“Feeds and Feeding” by Henry.

Protein contains nitrogen and is that part of the food or feed that builds the blood, muscles, bones, tissues, hair, hoofs, etc., of the animal. Clovers and alfalfa, peas, beans, milk, eggs, lean meat, etc., are high in protein.

Fat is a carbohydrate in a concentrated form, having 2.25 times the heat value of other digestible carbohydrates.



Things to Eat

"Man Needs a Balanced Ration." Feeding the family is as important as feeding the animals. Food has two functions to perform:

First, to build up the body and repair wasted tissue.

Second, to furnish energy for the production of heat and motion.

Uses of Proteins in the Body. Protein substances build up muscles and tissue. The protein is secured mainly from meats, eggs, milk, and cheese, or from legumes and cereals.

Legumes and cereals have such a large per cent of starches and sugars that if one were to depend entirely upon them for protein, they would eat too much of the starches and sugars. Vegetable protein is not so easily digested as that found in meats. It is best for us to eat a mixed diet.

Uses of Sugars, Starches and Fats: The best energy producing foods are sugars and starches in cereals and vegetables. Corn, wheat, potatoes, and rice should make up a large part of our diet. Fats are used in the same way, but have a much higher energy value and should be taken in much smaller quantities.

Fat is secured from butter, oils, olives, fat meats, nuts, etc. Cereals and vegetables contain but little fat.

Green Foods and Relishes: Fruits, green vegetables, and relishes furnish bulk, juiciness, flavor and the needed mineral elements.

Uses of Water in the Body: Water helps to dissolve and distribute the foods and it carries off the waste material.

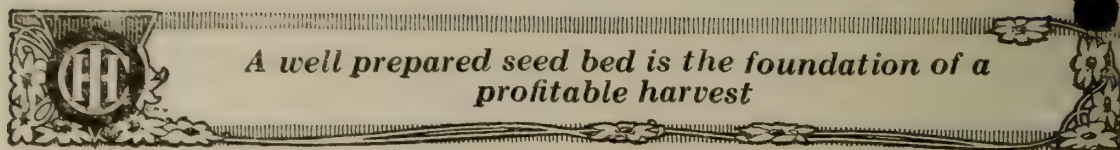
Much water is supplied by milk, green vegetables, etc. People should drink a great deal of water besides that consumed with meals.

Quantities of Materials Required for Various Mixtures of Mortar and Concrete—Portland Cement Assoc.

Mixture	Materials for One-Bag Batch			Resulting Volume in Cubic Feet		Quantities of Cement, Sand, and Stone Required for One Cubic Yard of Compacted Concrete		
	Cement in Sacks	Sand	Stone	Mortar	Concrete	Cement in Sacks	Sand	Stone
		Cu. Ft.	Cu. Ft.				Cu. Ft.	Cu. Ft.
1:1½	1	1.5	.....	1.75	.....	15.5	23.2	.....
1:2	1	2.0	.....	2.1	.....	12.8	25.6	.....
1:2½	1	2.5	.....	2.5	.....	11.0	27.5	.....
1:3	1	3.0	.....	2.8	.....	9.6	28.8	.....
1:2:3	1	2.0	3.0	.....	3.9	7.0	14.0	21.0
1:2:4	1	2.0	4.0	.....	4.5	6.0	12.0	24.0
1:2½:4	1	2.5	4.0	.....	4.8	5.6	14.0	22.4
1:2½:5	1	2.5	5.0	.....	5.4	5.0	12.5	25.0
1:3:6	1	3.0	6.0	.....	6.4	4.2	12.6	25.2

A Mechanical Horse Power is equivalent to a weight of 33,000 pounds raised one foot in one minute, or the pull in pounds times the distance passed over in one minute divided by 33,000. Example: A horse pulling 150 pounds traveling 2 miles per hour (176 feet per minute). Multiply 150 by 176, divide by 33,000, equals ¾ of one horse power.

Work equals force times the distance traveled. In the above example, 150 times 176 feet equals 26,400 foot pounds of work.



Thorough Tillage Increases the Profit

Turn a cow out to pasture or on the range and she soon finds the best place to feed—she moves about as she pleases. Contrast this with a plant, whether it be oats, wheat, corn or any of the common plants. The seed is planted. There it must grow and do the best it can. The surrounding soil—the seed-bed—is its home. The growth which the plant makes and the results obtained depend a great deal on the condition of the seed-bed.

How the Plant Grows. The soil is made up of an untold numbers of very, very small particles. If the seed-bed is in proper condition the plant sends its tiny, hairlike roots into the soil. These tiny roots obtain the moisture and a large part of the plant food for the growth of the plant from the minute soil particles. If the seed-bed is too loose the air soon carries the moisture away, then the plant will not send its small rootlets out into the soil; the plant's growth is retarded—the yield is cut down.

If the ground is cloddy and lumpy and hard the root growth is checked—the yield is cut down. The plant must have a proper seed-bed if best results are to be obtained.

A Proper Seed-bed. The best seed-bed for most crops is one in which the furrow slice is mellow and moist from top to bottom, yet compact, throughout. It is porous enough to contain air, yet has no large air spaces which will cause rapid evaporation. It has close contact with every inch of the bottom of the furrow and will draw moisture from the subsoil by capillarity. There are no clods—no lumps.



A well prepared seed bed is a long step toward a profitable crop

Implements to Use. The seed-bed you prepare depends very largely on the tillage implements used. With Deering and McCormick tillage implements you take no chances because they are designed and built to prepare the best possible seed-bed for the plant. When you use one of them you have an implement with the latest improvements and one which will give you as satisfactory service as you could expect from any farm machine. A postal card will bring you more information.

Composition of an Acre of Corn at Different Stages

(HOARD'S DAIRYMAN)

	TASSLED JUL. 30	SILKED AUG. 9	MILK AUG. 21	GLAZED SEPT. 7	RIPE SEPT. 23
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Weight of green corn . . .	18,045	25,745	32,600	32,295	28,460
Water contained	16,426	22,666	27,957	25,093	20,540
Dry matter contained . . .	1,619	3,078	4,643	7,202	7,918
Nutrients contained:					
Ash, or mineral matter .	139	201	232	302	364
Crude protein	240	437	479	644	678
Carbohydrates	1,186	2,272	3,703	5,996	6,562
Fat, or ether extract . .	72	168	229	260	314

Note.—Glazed corn has less water, more mineral matter, crude protein, carbohydrates and fat, than at any previous time. This indicates that glazed corn is best for silage.

**Concrete manure pit will help save all the
fertilizing value of manure**



Light and Frequent Application of Manure Bring Best Results

Spreading manure lightly and evenly, making it cover more acres so that once every three or four years the entire farm is covered, means bigger returns, and the upbuilding of the whole farm instead of enriching it in patches.

Value of \$3.49 per ton.—The Ohio Agricultural Station conducted experiments that not only show a greater return per acre from a small application, but indicate that a greater income may be obtained by applying the manure to the crop which gives the greatest financial returns per acre.

In a three-year rotation of potatoes, wheat and clover, manure was applied at the rate of 4, 8 and 16 tons to the acre on wheat. The average increase per ton of manure for twenty years has been \$3.49 for the four-ton application, \$2.69 for the eight-ton application, and \$2.24 for the sixteen-ton application.

On another plot in this rotation, eight tons of manure were applied to the acre for potatoes instead of wheat. The return in increased crop has been \$3.38 for each ton of manure as compared with \$2.69 for the same amount applied for wheat.

These figures prove that the use of manure should not only be governed by the type of farming, but also by the rotation practiced as well as the fact that a light and frequent application brings larger returns.

Comparison of Yields From Application of Fresh and Rotted Manure

The Maryland Agricultural Experiment Station in Bulletin No. 122, entitled "Stable Manures," proves conclusively that fresh manure is more valuable than rotted manure; also, that when applied as a top dressing, manure is far more effective as a fertilizing agent than when plowed under.

	*Corn Bus.	†Wheat Bus.
Unmanured.....	38.1	16.1
Fresh Manure.....	70.7	19.7
Rotted manure.....	65.1	19.1
Gain from fresh manure.....	32.6	3.6
Gain from rotted manure.....	27.6	3.0
Gain of fresh over rotted manure.....	5.0	0.6

*Average of four crops.

†Average of two crops.

Conclusion.—From the above table it is readily seen that fresh manure gives better results than rotted manure. Taking into account the fact that it takes two tons of fresh manure to make one ton of rotted manure, the above table shows the importance of spreading manure as fresh as possible.

Results of Applying Fresh and Rotted Manure

	Yields per acre							
	FRESH MANURE				ROTTED MANURE			
	Corn*		Wheat		Corn		Wheat†	
	Grain Bu.	Fodder Lbs.	Grain Bu.	Straw Lbs.	Grain Bu.	Fodder Lbs.	Grain Bu.	Straw Lbs.
Before plowing.....	87.2	6950	20.3	1080	82.3	6550	19.8	760
After plowing.....	98.1	7500	22.3	1160	82.6	6450	20.7	960
Gain from using Ma- nure as a top dressing	10.9	550	2.0	80	0.3	100	0.9	200

*Average of two crops.

†Average of one crop.

Conclusion.—The above table shows that top dressing after plowing is far better for corn and wheat than to plow the manure under.

To Mogul Engine Owners

The Mogul Engine Operator's Guide contains information that will be of service to Mogul Engine Owners. It is free for the asking.



The best sack for marketing grain is a pigskin or a cowhide



Here's a job nobody likes!

Narrow box—38 to 45 inches in width.
Wide spread—8 feet or better.

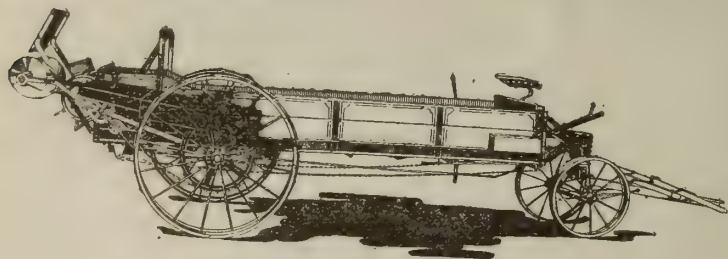
Spread Wide and Evenly

The data previously given proves that there is no more important machine on the farm than the spreader. When you buy, get the best. Invest your money and time where they count the most—in a Deering or a McCormick manure spreader. These machines have the following advantages:

Easy loading—waist high.
Sizes to suit; with return or reverse apron.

International Harvester Spreaders enable you to get the manure hauled in the shortest time. Since the spread is more than twice the width of the beater, you drive only half as far to get the load off. You do not have to drive on the manured ground to make the strip being spread meet the one already spread. There is a second beating, due to the wide spread attachment. This makes the particles fine and allows the soil to assimilate the fertilizing elements readily. The narrow box means that you can drive the spreader right into the stable, if the doors have reasonable width, and load directly from the gutter. With the slatted roller you can handle a

big load. This roller crushes down and feeds the beater uniformly. These machines are low and easy to load, however, there is abundance of clearance under them.



Spreads beyond the wheels

There are many other reasons why the Deering or the McCormick spread-

er is the one for you to buy. **You will find them in our catalog, sent free on request.** Write for our instructive book "Why You Should Use a Manure Spreader." It's free.

Lime is Needed in Most Soils

When soils are sour—when clovers refuse to thrive—lime is needed. No amount of other treatment will entirely correct the trouble.

The soils may be well drained, well supplied with phosphorus, potash, and nitrogen, and have an abundance of humus, yet if lacking in lime they cannot do their best producing of crops and profits. Legumes, especially clover and alfalfa, cannot be successfully grown in sour soils, and crop rotations without legumes are bound to be failures.

The amount of lime to use varies. The sourer the soil the more is needed. Wonderful results sometimes come from light applications, but it is better to use lime liberally. Two tons of ground limestone per acre has put many fields in condition to grow clover and alfalfa, doubling the net income per acre. When a field's income doubles, its value is greatly increased.

If you would get more milk—be kind to the cows



Indicted—For Increasing the Cream Checks

If raising cream checks ever gets to be a criminal offense, every Primrose cream separator in the country will have to go to jail. Every day we hear from Primrose users whose checks are larger than they were before the Primrose separator began to influence their size.

Easy to Keep in Perfect Adjustment.

Besides being a means of increasing dairy profits, the Primrose has another unusual feature. Any one who runs it can easily keep it in perfect adjustment. There is but one place on a Primrose separator where the natural wear can effect the work of the machine. That place is the hardened steel point that carries the weight of the bowl. Since that point is made of the finest tool steel, you can see that the adjusting will not take much of your time. A slight turn of a screw driver is the only adjustment needed. Nothing could be simpler.

The Primrose milk bowl is always in the right place, with the float in the correct position. Every bearing is plentifully oiled by the first turn of the handle. The bowl has the cleanest, closest skimming device and the largest skimming surface ever put into a separator.

Before buying a separator you will want to know all about the Primrose. Write us and we will send full information.



A Primrose saves all the cream and makes dairy work easy.

Twelve Silo Reasons

1. More feed can be stored in a given space in the form of silage than in the form of fodder or hay.
2. There is a smaller loss of feed material when a crop is made into silage, than when cured as fodder or hay.
3. Corn silage is a better feed than corn fodder.
4. An acre of corn can be placed in the silo at less cost than the same area can be husked and shredded.
5. Crops can be put in the silo during weather that could not be utilized in making hay or curing fodder.
6. More stock can be kept on a given area of land when silage is the basis of the ration.
7. There is less waste in feeding silage than in feeding fodder. Good silage properly fed is all consumed.
8. Silage is very palatable.
9. Silage, like other succulent feeds, has a beneficial effect upon the digestive organs.
10. Silage is the cheapest and best form in which a succulent feed can be provided for winter use.
11. Silage can be used for supplementing pasture more economically than can soiling crops, because it requires less labor, and it is more palatable.
12. Converting the corn crop into silage cleans the land and leaves it ready for another crop.—*T. E. Woodard in Farmers Bulletin 556.*

If you are interested in farming with a Kerosene Tractor we will gladly send you our descriptive tractor paper "Tractor Farming" Just drop us a card.



*Difficulties are blockades—there is always a way
round, over or under*

Bacteria—Silage—Silo Building



As silage this fodder would have been worth
30 to 40 percent more for feed

You know what bacteria are, of course—little “bugs” about $\frac{1}{25000}$ of an inch long and multiplying at a tremendous rate. Contrary to general opinion, they are tiny plants and not insects or animals. Each is a jellylike substance. They are of various shapes, mostly cylindrical or rod shaped, and thrive best in moisture, but they cannot live without some air; hence an air tight silo kills them. The centers or spores live, even for many years, revive, and develop new bodies when air is admitted.

These bacteria begin work at once, while the silo is being filled, and gradually the temperature of the silage rises to 158° Fahr. until you can hardly bear to put your hand into it. The heat that they themselves have created, together with their acid excretions, kills a great percentage of them. The more air there is in the silage, the hotter the silage gets, but too much air also favors the quick action of a certain kind of bacteria, which produces rotting. Hence good packing of the silage is necessary.

Scientific tests and practical experience reveal the following;

1. The silo must be permanently air tight.
2. The diameter should be as small as possible so as to leave only a small surface at the top exposed to the air.
3. The walls should be of such material as to not crack, crumble, decay or absorb moisture from the silage.
4. They should be cylindrical and perfectly smooth so that there are no corners or air pockets.
5. No part of the silo wall should be of material that will rust, crumble or decay—due to the acid of the silage within, or weathering without.
6. The doors should be of a non-warping wood and other material so as to fit perfectly at all times.
7. The walls should be of such construction as to prevent extremes of temperature.

There are many good silos on the market which include the other practical points—strength, durability, convenience, and attractiveness.

Average Periods of Incubation

Chickens.....	20-22 days	Guinea fowls.....	26 days
Geese.....	28-34 days	Pheasants.....	25 days
Ducks.....	28 days	Ostriches.....	40-42 days
Turkeys.....	27-29 days	Pigeons.....	18 days
Canary Birds.....	14 days		

Weights of Everyday Things

A barrel of flour weighs.....	196 lbs.	A barrel of beef weighs.....	200 lbs.
A barrel of salt weighs.....	280 “	Cement, Portland, weight	
A barrel of pork weighs.....	200 “	per bag (cu. ft.).....	96 “

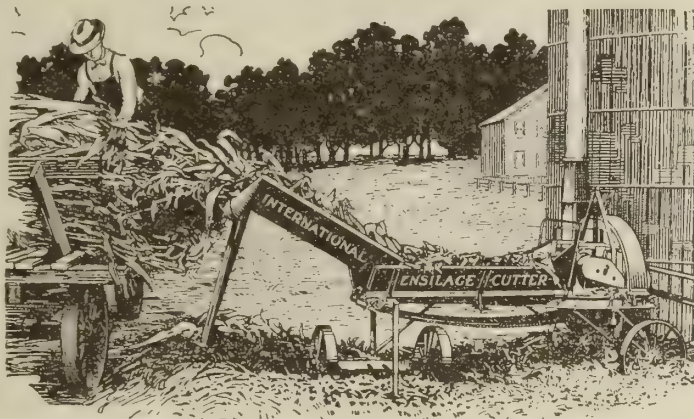


Silage Pays

The silo is now recognized as the most important single factor in successful dairy farming or stock raising. The farm journals, experiment stations and successful dairymen constantly praise the silo, and urge every farmer to build one and fill it. If you want to know fully why silage pays, our splendid 52-page book, "A Silo on Every Farm," will tell you. Write for it.

Cut the Filling Cost. Once you have a silo, it must be filled. Are you going to have the work done by a custom cutter, club together with other farmers on a good-sized cutter, or do the work yourself with your own cutter and engine? In any case, there is an International Harvester ensilage cutter for the job and our largest sizes will fill any silo—there is none too high for them. What is probably the tallest silo in the world—110 feet high—belonging to Humphrey Jones, Washington Court House, Ohio, was filled with ease by one of our Type A ensilage cutters. All International Harvester cutters are of the knife-on-flywheel type. They cut, throw and blow all in one operation, saving much power as compared with cutters where the knife cylinder is driven by power-eating chains and gears.

If you wish to fill your own silo an International cutter, will prove as good an investment as any machine on your farm. As a silo owner you can afford to own an ensilage cutter just as well as any of the common farm machines. An attractive catalog is yours upon request.



International Ensilage Cutters are easy to feed—the extension corn chute and large paddle roll do away with at least one man's labor

Silage Compared With Other Feeds

The following table by Professor Haecker gives the relative value of silage and other feeds at the Nebraska Experiment Station:

One ton of silage equals one ton sugar beets.

Three tons of silage equal one ton clover hay.

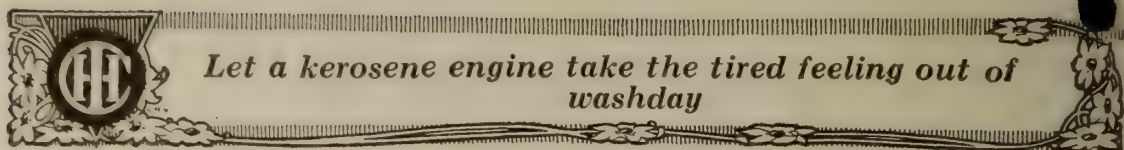
Two and one-fourth tons of silage equal one ton marsh hay.

Three and one-half tons of silage equal one ton prairie hay.

One ton of hay occupies about 500 cu. ft., one ton silage about 50 cu. ft.

Amount of Silage to Feed per Day.

Kinds of Stock	Daily Ration. Lbs.
Beef Cattle—Wintering calves 8 months old.....	10 to 15
Wintering breeding cows.....	20 to 30
Fattening beef cattle 18 to 22 months old—	
First stage of fattening.....	20 to 30
Latter stages of fattening.....	12 to 20
Dairy Cattle.....	25 to 40
Sheep—Wintering breeding sheep.....	2 to 3
Fattening Lambs.....	1 to 3
Fattening Sheep.....	2 to 3



Save Money by Using Engine Power

Are you doing the hard jobs on the farm by hand power or by engine power? If you are using man power for many of the small jobs where engine power could be used economically it is costing you more than it ought to. Let us get it into figures and see. U. S. Bulletin No. 73 says that the average hired man on the farm works less than 200 hours per month. On this basis figuring a wage of \$25.00 per month and \$13.00 for board, washing, etc., one hour of man power costs 19 cents. It takes eight men to develop power equivalent to that of a one-horse power engine. The labor of eight men would cost \$1.52 an hour.

Engine Power Costs But a Few Cents an Hour. Figured on the basis of a one-horse power engine, working 1,000 hours a year.

Fuel (125 gallons of kerosene at 8.4c per gallon).....	10.60
Oil (7 gallons at 30c per gallon).....	2.10

1000 hours engine power costs.....\$12.70

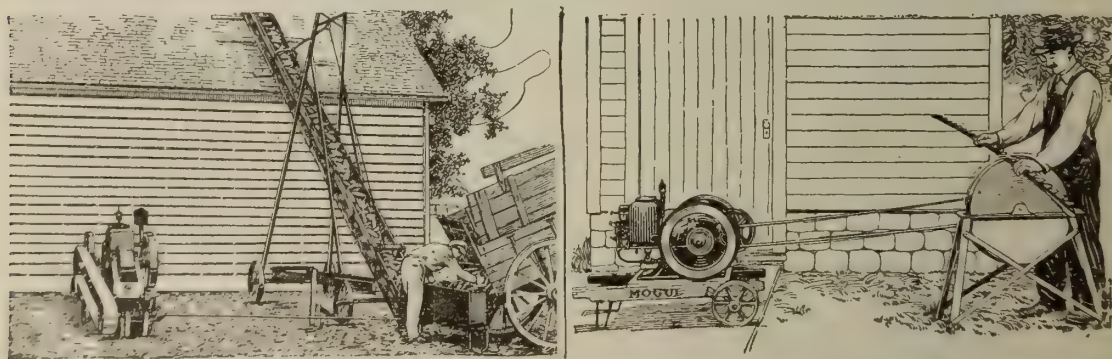
Then one hour of engine power costs less than 1½ cents. But say that it costs three cents, there is still a saving of \$1.49 per hour over the equivalent in man power, or engine power is less than one-fiftieth the cost of man power.

Many Jobs for the Engine: When you think of the many jobs an engine can do—pumping water, sawing wood, running a cream separator, churn, washing machine, corn sheller, etc., you can see how quickly an engine will pay for itself. Do not let another year go by without an engine to help you.

The Important Difference in Engines: We know that International Harvester engines are built far better than the average engine. But there is another difference between International Harvester engines and others that is just as important—that is the kind of fuel they use. There was a time when gasoline produced cheap farm power. Now I H C engines operating on kerosene save from 40 to 50 per cent of the fuel cost of a gasoline engine. Suppose gasoline should become cheaper than kerosene, you would still be safe with an I H C engine, because they operate on gasoline and other high-grade fuels just as efficiently as on kerosene.

When you use an engine, use an International Harvester Titan or Mogul Kerosene engine. They are made in sizes from 1 to 50 H. P. They are backed by mechanical experience covering many years and by a knowledge of requirements of the farm that cannot be equaled by any other organization in the world.

International Harvester gasoline engines are also made in sizes to meet the needs of the average farm. Should you desire a gasoline engine you will be well pleased with a Titan or a Mogul. They are built to serve you. Write for our descriptive engine catalog.



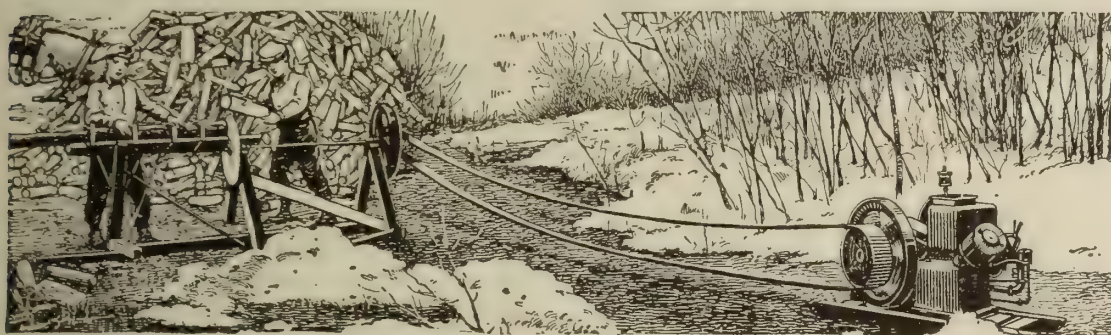
Titan and Mogul Kerosene Engines Saving Labor and Time.



Don't Waste Brain Power

Sawing wood by hand is a slow, hard, and expensive job. With a kerosene engine and a power saw, the winter's supply is cut quickly, without the back-breaking strain of the bucksaw, and at less expense. Man power costs many times as much as kerosene engine power. Let the engine do the hard jobs.

International engines have made satisfied owners in all sections of the country. Do you know why? It is because they give real service. Some have been used twelve or more years with only a few dollars spent for repairs. Do you know of another engine that can beat that record? **A postal card will bring you a descriptive catalog.** For kerosene tractors see pages 23, 24, 25 and 26.



A hard job made easy with a kerosene engine

You May Want Information

Many of the problems of the farm can be solved by the information obtained at experimental farms located in all sections of Canada. Bulletins, pamphlets, and other information may be obtained by writing any of the following addresses:

Dominion Field Husbandman, Experimental Farm, Ottawa, Ont.
Superintendent, Experimental Station, Lacombe, Alta.
Superintendent, Experimental Station, Lethbridge, Alta.
Superintendent, Experimental Sub-station, Fort Vermilion, Alta.
Superintendent, Experimental Farm, Agassiz, B. C.
Superintendent, Experimental Station, Invermere, B. C.
Superintendent, Experimental Station, Sidney, B. C.
Superintendent, Experimental Station, Summerland, B. C.
Superintendent, Experimental Farm, Brandon, Man.
Superintendent, Experimental Station, Morden, Man.
Superintendent, Experimental Station, Fredericton, N. B.
Superintendent, Experimental Farm, Nappan, N. S.
Superintendent, Experimental Station, Kentville, N. S.
Superintendent, Experimental Station, Charlottetown, P. E. I.
Superintendent, Experimental Station, Cap Rouge, Que.
Superintendent, Experimental Station, Lennoxville, Que.
Superintendent, Experimental Station, St. Anne de la Pocatière, Que.
Superintendent, Experimental Farm, Indian Head, Sask.
Superintendent, Experimental Station, Rosthern, Sask.
Superintendent, Experimental Station, Scott, Sask.



Do not support your cows; let them support you

Antidotes for Poison

First—Send for a physician. Second—Induce vomiting by tickling throat with feather or finger; drinking hot water or strong mustard and water; swallow sweet oil or whites of eggs. Acids are antidotes for alkalies and vice versa.

For Poisoning From Opium, Laudanum, and Morphine—An emetic should be followed by strong coffee or the white of an egg. Keep the patient walking for two or three hours.

For Poisoning From Arsenic, Corrosive Sublimate, Verdigris, Blue Vitriol, and Vegetables Kept in Copper Kettles—Give an emetic and the white of an egg, sweet-oil and milk.

For Poisoning From Hemlock, Aconite, Belladonna, and Foxglove—After emetic give tannin and stimulants.

Strychnine—First give an emetic, and then large dose of bromide of sodium (60 grains in solution). Repeat every hour until three or four doses have been taken.

Toadstool Poisoning—Give emetics promptly, then castor oil and stimulants. Apply heat.

Poison Ivy or Oak—There are three generally effective remedies for poison ivy or oak. One is to apply hot water to the poisoned surface. Another is peroxide of hydrogen. The third is to apply a solution of sugar of lead, about 40 grains to a pound of water. Two other remedies that are more or less effective are baking soda and dry starch.

First Aid to the Injured

Burns and Scalds—Cover with cooking soda and lay wet cloths over the injured parts. Household ammonia applied immediately is excellent; also white of egg and olive oil; olive or linseed oil, plain or mixed with chalk and whiting; sweet or olive oil and lime water.

Lightning—Dash water over the person struck.

Sunstroke—Loosen clothing. Get the patient into the shade and apply ice-cold water to head. Keep head in elevated position.

Stings of Insects—Apply weak ammonia, oil, salt water, iodine.

Mad Dog or Snake Bite—Tie a cord tightly above wound. Suck the wound and cauterize with caustic or white-hot iron immediately or cut out adjoining parts with a sharp knife. Give whiskey or brandy.

Fainting—Place flat on back. Allow fresh air to circulate, and sprinkle with water. Place head lower than rest of body.

Fire in One's Clothing—Don't run—especially not downstairs or out-of-doors. Roll on a carpet, or wrap in a woolen rug or blanket. Keep the head down, so as not to inhale flame.

Boxes of Various Capacities

A box 4-in. square and 4½-in. deep will contain a quart (dry measure).

A box 8-in. square and 4¾-in. deep will contain a gallon (dry measure).

A box 8-inches by 8½-inches and 8-inches deep will contain one peck.

A box 13½-inches square and 11¼-inches deep will contain a bushel.

A box 24-inches square and 20-inches deep will contain nearly a barrel.

Bacteria are small vegetable organisms that occur in the air, water, soil, plants and bodies of living animals. Some kinds of bacteria are beneficial—others cause disease in man, animals and plants.

Carbohydrate means formed of carbon, hydrogen and oxygen. Sugars and starch are the main carbohydrates. In food or feeds they produce the fat and the heat or energy of the body.



Cream is Worth Money

You know there is profit in selling cream. It is worth too much to waste, yet you are wasting it unless you are using a separator that gets all the cream.

In hundreds of tests conducted under bad as well as good conditions, the Lily cream separator has proved itself the closest skimmer of them all. The Lily separator has made satisfied owners everywhere, because it gets all the cream.

A Close Skimmer. Furthermore, the Lily is a close skimmer, not only when it is new, but for years after it has made hundreds of dollars for its owner. The two reasons for this are the Lily bowl and the one simple adjustment that enables you to keep the bowl in exactly the right position at all times.



Getting All the Cream

The bowl is compact and convenient to handle, yet it provides a greater skimming surface, and twice the number of cream gatherers, than the average cream separator skimming device. It lifts off the spindle, leaving the spindle in the separator, where it belongs. It comes apart easily, but it can't leak. There is always a clear passageway for the cream.

The Lily Gets all the Cream. There are two cream openings instead of the usual one. Then, too, the thickness of the cream is regulated by a milk screw instead of the usual cream screw. To get thick cream you don't choke the cream outlet and force part of the cream into the skim milk but you enlarge the skim milk outlet and discharge more milk.

Use a Lily cream separator and get all the cream.

Saving the Grain

Reliable binder twine is one of the most important factors in saving the whole grain crop. Harvest is the pay day of the year—it is precious time—and the grain is the pay for the labor and time of growing the crop. Then it is poor economy to put dependence in anything but the very best and most reliable binder twine.



No bunches, no weak spots, no kinks. It has uniform strength and size

because the sisal and manila fibres are carefully selected and every step in their preparation for spinning is done under the strictest inspection. The spinning is not only watched, but frequent tests for strength, length and evenness are made. They are built up to a standard.

Play Safe. If you want to avoid binder twine troubles, use Deering or McCormick binder twine. They are time and grain savers.



Removing Stains

Blood—Rub with common soap, soak in cold water. If necessary, add a teaspoon of turpentine to water. If the goods is thick, apply a paste of raw starch to the stain. Renew paste from time to time until stain disappears.

Chocolate, Machine Oil, All Grease Stains—Wash with cold water and soap. Borax or ammonia added helps. Soften old grease spots with turpentine, oil, or lard before washing the cloth.

For Spots on Wool or Silk—For Wool, dissolve the grease in benzine, alcohol, chloroform, ether, carbona, or benzol. A little salt added to gasoline prevents it leaving a ring. For Silk, or delicate fabrics, use ether or chloroform.

Fruit, Coffee, Indigo—Spread stained surface of the cloth over bowl or tub. Pour boiling water through the stained part of the cloth. The water should strike the stain with force.

Grass Stains—Wash with soap and cold water. If the fabric has no delicate colors and the stain is fresh, treat with ammonia water, or alcohol. For colored fabrics, apply molasses or a paste of soap and cooking soda. Let stand over night.

Ink varies greatly in composition. It is well to experiment with a corner of the spot before operating on the whole.

1. If the ink stain is fresh, soak the stained portion of the cloth in milk. As the milk becomes discolored, change for a fresh supply.

2. Wet the stain with cold water. Apply a ten per cent solution of oxalic acid to stain, let stand a few minutes, and rinse. Repeat until stain disappears. Rinse in water to which borax or ammonia has been added. Oxalic acid will remove the color.

Iodine Stains—Soak in alcohol, chloroform, or ether.

Iron Rust—Wet the stained part with borax and water, or ammonia, and spread over a bowl of boiling water. Apply a ten per cent solution of hydrochloric acid, drop by drop, until the stain begins to brighten. Dip at once into alkaline water. If the stain does not disappear, add more acid and rinse again. After the stain is removed, rinse at once thoroughly in water to which borax or ammonia has been added. The borax or ammonia is to neutralize any acid that may remain.

2. Wet the stained part with a paste made of lemon juice, salt, starch, and soap, and expose it to sunlight. This is a simple method to employ, but it takes longer and is often not effective.

Lamp Black, Tar—Saturate spot with kerosene. Wash with naptha soap and water.

Mildew—Mildew is very difficult to remove if of long standing.

1. Wet stains with lemon juice and expose to sun.

2. Wet with paste made of one tablespoon of starch, juice of one lemon, soft soap, and salt, and expose to action of sun.

Paint, Varnish—1. Wet the spot with turpentine, benzine, or alcohol, let it stand a few minutes. Wet again and sponge or pat with a clean cloth. Continue until stain disappears.

2. Use chloroform for delicate colors. If the paint is old it may take some time to soften. Treat old paint stains with equal parts of ammonia and turpentine.

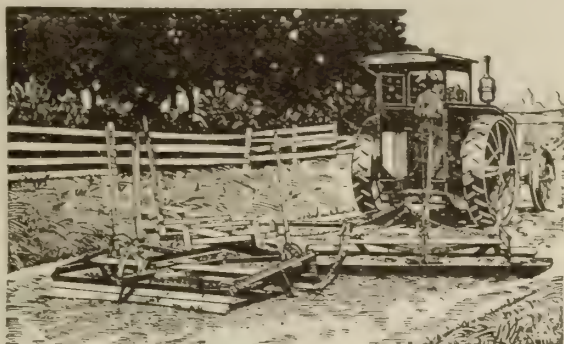
Scorch—Scorched fabrics can be restored if the threads are uninjured. Wet the stained portion and expose to the action of the sun. Repeat several times.

Fermentation means a chemical change caused by ferments, as in making vinegar from cider, or the souring of milk. Ordinary fermentation takes place under favorable conditions and changes certain kinds of sugar into alcohol and a gas (carbon dioxide). Fermentation converts corn into silage and vegetable matter into humus.



Good Roads Will Save Time

The U. S. office of public roads found by tests on earth roads that improved roads showed a saving of 35.6 per cent in draft over the unimproved. In other words, a man who hauled 40 bushels of corn on the unimproved could haul 54 bushels on the improved earth road with the same energy expended by his team. If he hauled 100 bushels of any product on the unimproved, he could haul 135.6 bushels on the improved.

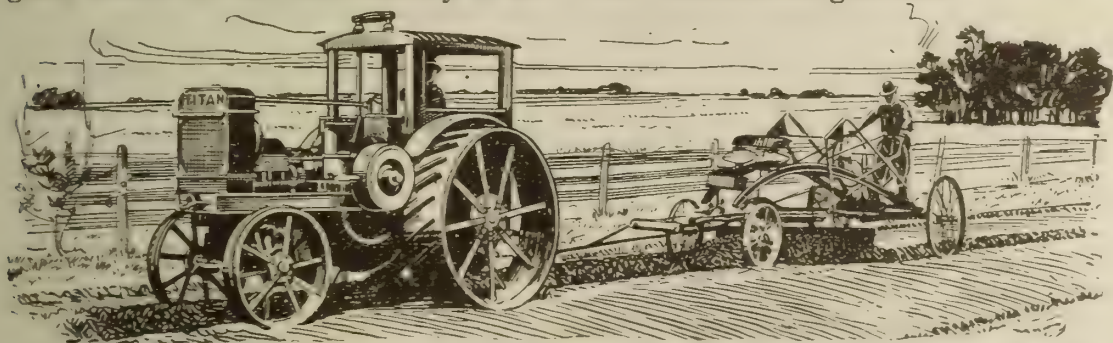


Complete job in one trip

According to the Good Roads Year Book at least 85 per cent of the roads are unimproved. It will then be safe to estimate that practically 85 per cent of farm products are hauled over unimproved roads. Then according to the results of the tests of the U. S. office of public roads, improved roads would mean a yearly saving to the farmers of more than 1,400,000 days of labor in hauling corn, more than 1,500,000 days in hauling wheat, and more than 570,000 days in hauling cotton.

A Cheap Power Needed. The use of animal power for grading roads has always been unsatisfactory from nearly every standpoint. Road grading is very hard work. It is practically impossible to operate a road grader properly with horse power. The increase in the cost of both horses and feeds have made animal power very expensive. Steam and gasoline power were a great improvement over horse power, but because of their high cost they have given place to the cheaper and better kerosene power.

Mogul and Titan Tractors operate successfully on kerosene. Because of the low cost of kerosene, they build practically twice as many miles of good roads for the same money as will other tractors on gasoline.



Building a good road with kerosene power

Save the Direction Papers

There is a book — "Directions for Setting Up and Operating" — packed with every I H C machine. This book contains a complete list of repair parts with numbers. Be sure you get this book, and save it for future reference. A permanent set of these books, of the Almanac, educational bulletins etc., can be made with one of our loose leaf adjustable book covers. Send 15 cents in stamps to cover wrapping, postage, etc., address International Harvester Co. of Canada. Adv. Dept., Chicago, U. S. A.



A serviceable book cover



The home is producing the future men and women—the greatest crop of all

International Harvester Binders Worthy of Confidence

They Harvest Millions of Acres of Grain. Every year thousands of International Harvester binders leave our warehouses to take up the harvest work on American farms. Every year the small-grain crops of the country are cut and tied into bundles of convenient size for handling by Deering and McCormick binders and binder twine. Every year millions of bushels of wheat, oats, rye, barley and rice are harvested with less work and trouble than it used to take to harvest a few hundred acres of grain. And all this is possible only because I H C binders and binder twine have proved themselves efficient and dependable. A grain binder with the International Harvester trade-mark on it is worthy of the confidence farmers put in it. It does its work.

International Harvester binders have been perfected in every possible detail. The highest grade of materials are used throughout—the kind that experience in the field has shown to be best adapted to each part.

Having a high quality machine, each owner of an International Harvester



International Harvester Binders
have a record for service.

binder is fully protected against loss from accident or mishap through the splendid repair service given by our sixteen branch houses in principal Canadian cities and by the thousands of local dealers in all parts of the country who carry stocks of necessary repairs, or can get them from a branch house in a few hours' time. Write for descriptive catalog and our book "Guide for the Care and operation of Grain Binders."

Comparative Measures and Weights

Accuracy of measurement is necessary for accuracy in all processes of food preparation. The following comparisons of quantities may prove useful to the housewife: (All measurements are taken level).

- 3 teaspoonfuls make 1 tablespoonful.
- 16 tablespoonfuls (dry material) make 1 cupful.
- 14 tablespoonfuls (liquid) make 1 cupful.

It is equally desirable to know the equivalent weights of the measurements called for:

2	cupfuls butter packed solidly.....	1	pound
2	cupfuls sugar.....	1	"
2	cupfuls meat finely chopped.....	1	"
2 $\frac{2}{3}$	cupfuls powdered sugar.....	1	"
2 $\frac{2}{3}$	cupfuls brown sugar.....	1	"
2 $\frac{2}{3}$	cupfuls oatmeal.....	1	"
4 $\frac{3}{4}$	cupfuls rolled oats.....	1	"
4	cupfuls flour.....	1	"
9 or 10	eggs.....	1	"
2	tablespoonfuls butter.....	1	ounce
4	tablespoonfuls flour.....	1	"
1	egg, slightly beaten.....	4	tablespoonfuls
1	lemon (juice).....	3	"

See pages 23, 24, 25 and 26 for Kerosene Tractors.

Select good seed, then plant your corn with an
International planter



Tied to a Water Pail

An Iowa Farmer's wife once asked: "Why should the woman on the farm do her heavy household work by hand when the man wouldn't think of harvesting his grain with a reaping hook?" She no doubt had in mind the waste of time and energy for the average farmer's wife in doing her hardest jobs, carrying and pumping water, washing, churning, etc., by hand, when the man himself used modern farm machines to do his work.

Wyoming Farm Bulletin (Aug. 1915), shows that one farmer's wife in supplying water for the house during one year's time carried the weight of 224 horses, each weighing 2,000 pounds, or the weight of 560 cows of 800 pounds each. This housewife was practically tied to a water pail, to say nothing of the pumping.

A Mogul kerosene engine would have done all this work, as well as other heavy household jobs, thus giving her more time for mending, patching, cooking, etc., and for reading, writing, and other pleasures. **Are you tied to a water pail, washing machine, churn, etc.?**

A Mogul kerosene engine will deliver 1 H. P. for an hour on about one pint of kerosene. What will a pint of kerosene cost you? Not over two cents at the most. According to the U. S. Year Book, Dept. of Agr., the average price of eggs on the farm for 1915 was about two cents each. **A Mogul kerosene engine will run your washing machine, pump, churn, etc., for an hour for the price of an egg. Just think—a hen can pay for all the power you use, just by "laying around". Use a Mogul kerosene engine. It will take the tired feeling out of your hard household jobs.**

Mogul kerosene engines are made in 1 to 50 H. P. sizes—stationary, skid-mounted, mounting, portable, hopper or tank-cooled. A size and style for every kind of farm work. **A post card will bring you an instructive catalog and more complete information.**

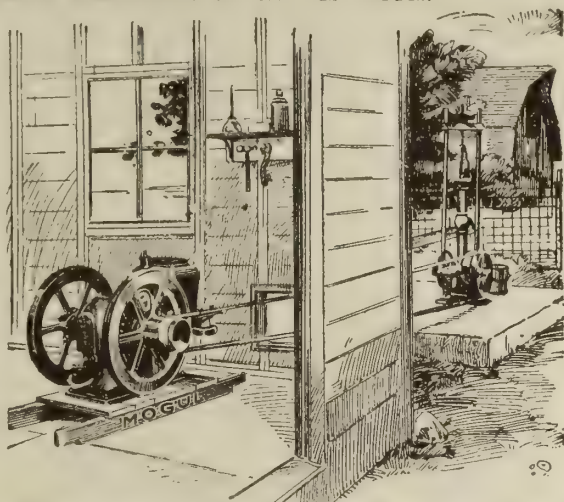
Cut Down the Weeds Before They Cut Down the Profits

It has been estimated that weeds cause the loss of several hundred million dollars every year. If this loss is to be saved or even decreased every farmer must put forth persistent effort to not only clean up the fields, but fence rows and corners, roadsides, etc.

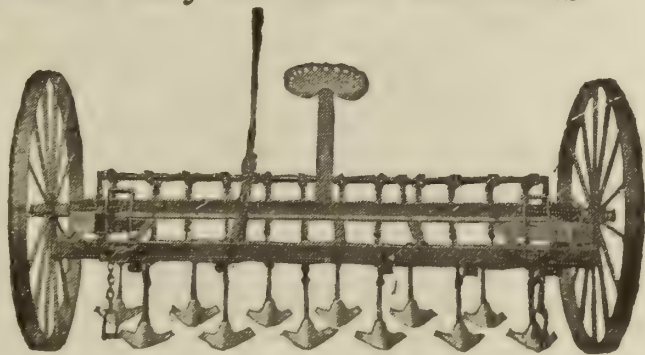
Weeds cut down the profits by reducing the yield, by damaging the crop, by cheapening the product, by

robbing the soil of plant food and moisture, by harboring insects and fungus diseases, and by occupying land where profitable crops should be growing.

Thorough Cultivation is the surest way of killing the common weeds, such as foxtail, ragweed, cocklebur, wild carrot, teasel, dock, buckhorn, Canadian thistle, red sorrel, etc. With quack grass, good results are obtained by plowing very deep, followed by clean cultivation.



Kerosene power pumps water at much less than the cost of man power



International Cultivators kill the weeds.



The planter must be right, or the corn crop will be wrong

Head Work Takes the Backache Out of Wash Day

Before wash day sort the clothing, to discover rents and stains; mend rents, remove stains and put the white clothes to soak.

The purpose of soaking clothes is to loosen the dirt. Soak in solution made by using one bar ordinary soap, 3 gallons of water, one-half to one tablespoon of turpentine, one to three tablespoons ammonia.

If members of the family have colds put the handkerchiefs to soak in a solution of boric acid. Wash separately and boil for 20 minutes.

Use soft water, if possible. Hard water may be softened by using two tablespoonfuls of the following solution to each gallon of water.

Softening Solution: Dissolve 1 lb. of sodium carbonate or sal soda in 2 quarts of boiling water. Add $\frac{1}{4}$ lb. chloride of lime. Stir with a wooden stick until lumps are broken. Allow to settle. Pour off clear liquid into bottles for use.

Soap Solution: Rubbing the bar of soap on the garment is rather extravagant, and contact with the soap may discolor fine fabrics. If washing colored goods use one-quarter pound of mild soap to one gallon of water.

For ordinary purposes use one bar common washing soap and 2 to 3 quarts of water. Shave soap and put into cold water. Heat gradually until soap is dissolved. Stains should be removed from the clothing before the soap is applied. See page 18.

Use Bluing to counteract the tendency of yellowness of white clothes. Ultramarine blue is the most satisfactory. Most common liquid blues are made from Prussian blue basis. If used after clothes have been carelessly rinsed, the iron in its composition will probably prove troublesome by the soap which is carried into the bluing water making an iron compound which later appears as rust spots on the clothes.

How to Set Colors in Gingham: Salt brine, sugar of lead, alum or vinegar may be used for this purpose. Make up the solution by using $\frac{1}{2}$ cup of mild vinegar or 2 cups of salt or one tablespoonful powdered alum or one tablespoonful sugar of lead to a gallon of water. Allow material to soak several hours in solution.



Let Kerosene Power do your rubbing and wringing

With the salt and vinegar solutions material may soak over night without harm. Be sure that the materials are thoroughly dried before being washed. Always dry in the shade.

Vinegar is best for pinks, salt brine for blacks and reds, sugar of lead for blues and browns, and alums for greens, lavenders, purples, etc.

Soaking garment in weak solution of borax before washing will freshen colors. A little ox-gall in borax water will help keep weak colors bright.

Length of Time Trees and Bushes Will Bear

Apple.....	25-40 years
Blackberry.....	6-14 years
Currant.....	20 years
Gooseberry.....	20 years

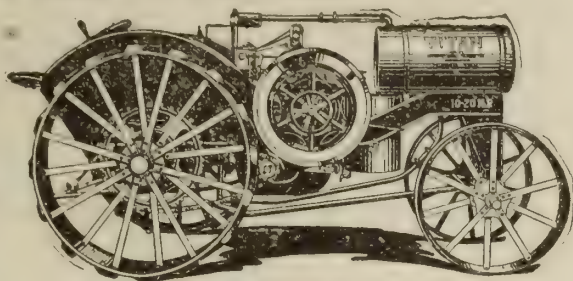
Pear.....	50-75 years
Plum.....	20-25 years
Raspberry.....	6-12 years
Strawberry.....	1- 3 years

Get the weeds before the weeds get your grain



Kerosene Tractors That Give Service

Here are three tractors built for service. The Titan line consists of a 10-20 H. P., suitable for all work on a medium sized farm, light road making, and any other work within its capacity; a 15-30 H. P. with a larger capacity for plowing and other drawbar work, designed for the larger farms as well as for moderately heavy work in other lines where tractors

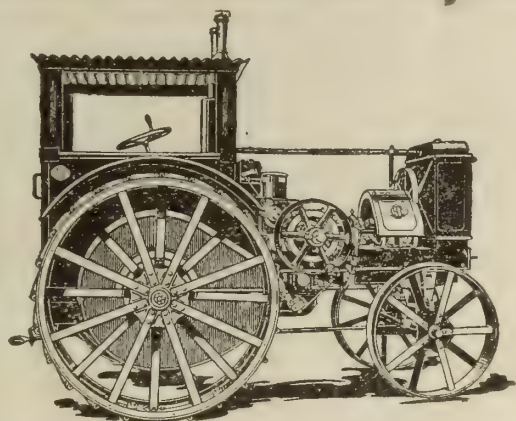


TITAN 10-20 H. P. Kerosene Tractor

are used; a 30-60 H. P., a powerful machine for any tractor work where a large amount of power is required. All give good service on belt work.

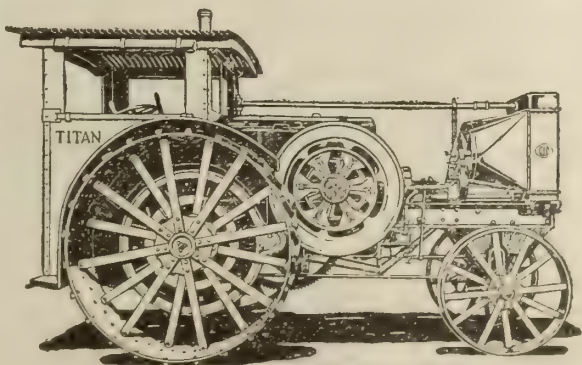
All Titan tractors are built to do good work for years. Materials that will best stand the wear and tear of farm work are used in their construction. Their convenience and simplicity make them easy to operate.

Experience taught us that a tractor should stand squarely on four wheels, like a wagon; that this construction prevented soil packing; that the most efficient drive is from two rear wheels; that a slow speed power plant means longer life to the parts subjected to wear. We know that the bearings will last longer if they are given the right amount of oil. To help the operator oil the tractor properly we supply automatic force feed oilers for all machines.



TITAN 15-30 H. P. Kerosene Tractor

Other features that make Titan tractors simple and easy to operate are included in their design, but most important is the fact that all Titan engines operate on low grade kerosene, or coal oil, using about the same amount of fuel as the gasoline tractors. This means a fuel saving of one-half over gasoline tractors of equal power. Every man who is considering the purchase of a tractor should find out the prices of kerosene and gasoline in his locality, then figure out what he saves by buying a Titan tractor which operates successfully on kerosene. We will gladly send you a catalog on request.



TITAN 30-60 H. P. Kerosene Tractor

Wedding Anniversaries

First.....Cotton
Second.....Paper
Third.....Leather
Fifth.....Wooden
Seventh.....Woolen
Tenth.....Tin
Twelfth.....Silk and Fine Linen

Fifteenth.....Crystal
Twentieth.....China
Twenty-Fifth.....Silver
Thirtieth.....Pearl
Fortieth.....Ruby
Fiftieth.....Golden
Seventy-Fifth.....Diamond



The Vessot feed grinder is a feed saver.



Like other great inventions that have become necessities, the small kerosene tractor is filling a long-felt need for a cheap farm power.

Commandments for the Tractor Buyer

Buy from a reliable company—one that is in business to stay. *Play safe.*

Be sure you can get extra parts and expert service without long delays.

Delays cost you money, not the other fellow.

Buy a standard make of tractor—one with two drive wheels and two front wheels. *Can you imagine a three-legged horse doing hard work?*

Don't buy an experimental tractor. *Let the builder do the experimenting.*

Buy the tractor that is built to operate on kerosene, distillate, and other cheap fuels. *Cheap fuels mean cheap power.*

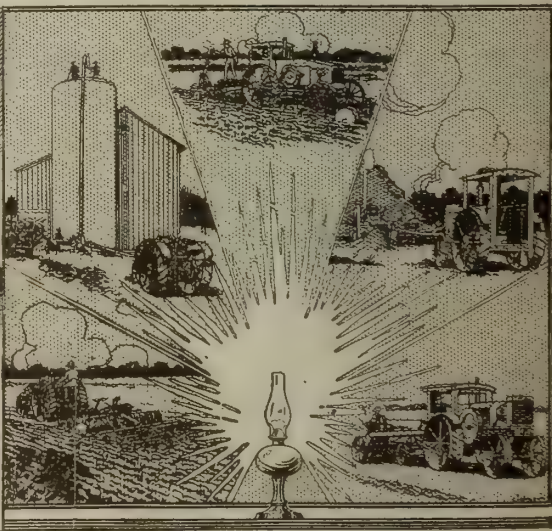
Do not buy a built-over tractor—one that needs an extra carburetor for kerosene. *Reliable kerosene tractors are made, not built over.*

Ask the tractor salesman to prove that his tractor will operate successfully and economically on kerosene by actually doing hard work continuously for several hours. *Works are more convincing than words.*

Be sure that the tractor you buy is suitable for belt work—has a large belt pulley. *There is less power lost by belt slippage on a large pulley.*

See that the motor is enclosed—that no dust or dirt will reach the working parts. *Dust and dirt cause excessive wear.*

Buy a tractor large enough to do your work and then don't overload it.



The same fuel that lighted farm homes for two generations now supplies power for doing farm work.



Kerosene (Common Coal Oil) Produces the Cheapest Farm Power

Universally Low-Priced. Average price reports from all sections of the country since 1910 show that gasoline has ranged from 30 to 99 per cent higher in price than kerosene—an average of more than 50 per cent higher. Even the best authorities do not predict cheaper gasoline for the future. In any event, cheaper gasoline will mean cheaper kerosene.

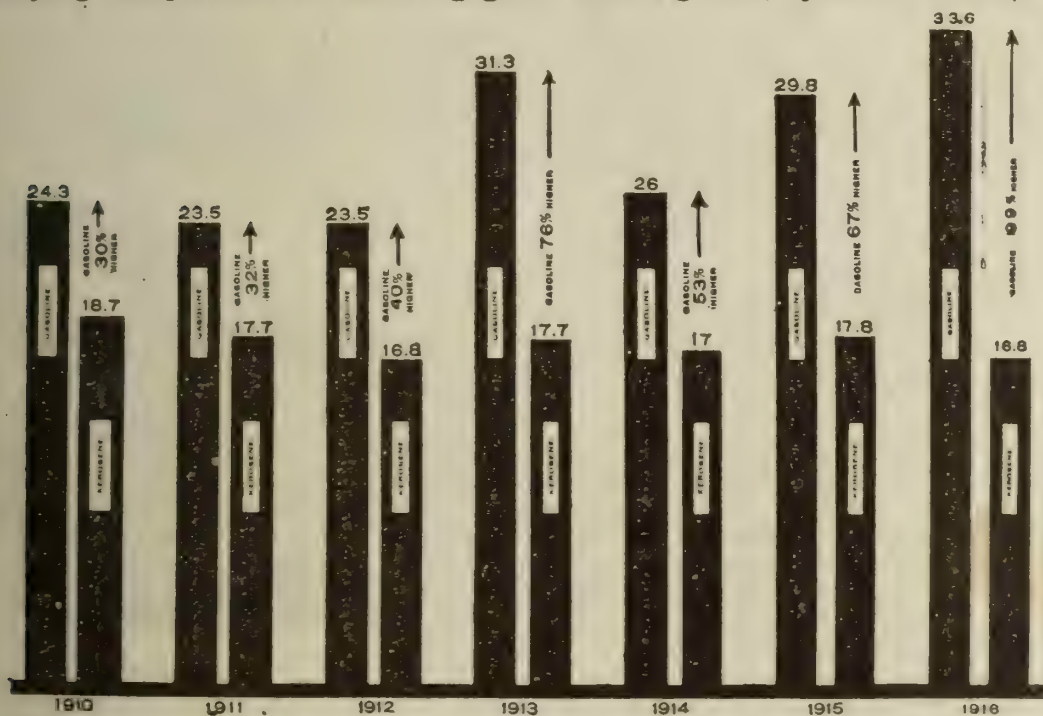
Made in Larger Quantities. By the best distillation process the manufacturer obtains practically equal parts of gasoline and kerosene from crude oil, while in some instances the relative amounts show twice as much kerosene as gasoline. Think of the immense quantities of gasoline used by automobiles, engines, aeroplanes, motor boats, etc., and you will have some idea of the available supply of kerosene.

Small Demand. The demands for kerosene, except for lighting purposes, are small, compared with the supply. As it is necessary to have a specially designed, well made engine to operate successfully on kerosene, the amount of kerosene used for engine fuel is small, compared with gasoline.

The Price the Main Difference. The great difference between gasoline and kerosene is the price. They will produce practically the same amounts of power gallon for gallon—in fact, a properly designed engine will use only one-twelfth of a pint more of kerosene per horse power hour than it will of gasoline under full load. After all, it is the price of power that counts—kerosene power costs on an average less than half as much as gasoline power.

Safe to Handle. As kerosene evaporates slower than gasoline there is less risk of fire and less danger of violating fire insurance regulations.

Used for Other Purposes. Kerosene from the same tank that is used for engine fuel may serve many other purposes such as for killing lice, mites and disease germs in chicken coops; for cleaning sinks, stoves, screens, for destroying mosquitoes; for removing grass stains, grease, cylinder carbon, etc.

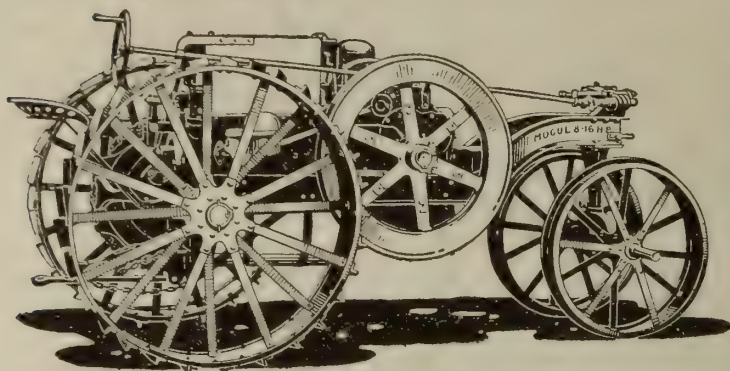


This chart shows the average cost of gasoline and kerosene for all sections of Canada since 1910. Note that gasoline has averaged from 30% to 99% higher in price than kerosene. A kerosene tractor or kerosene engine will give you the cheapest possible power.



The best tillage implements prepare the best seed beds

Mogul Tractors meet all Requirements



Mogul 8-16 Kerosene Tractor

From the reports sent to the U. S. Dept. of Agr. (Farmers' Bulletin 719) by more than 200 Illinois tractor owners, it is found they make three requirements for the farm tractor to meet.

1. Have the ability to do heavy work and do it rapidly, thus covering the desired acreage within the proper season.

2. Save man labor and reduce the hired help.

3. Plow to a good depth, especially in hot weather.

There is at least one more important requirement:

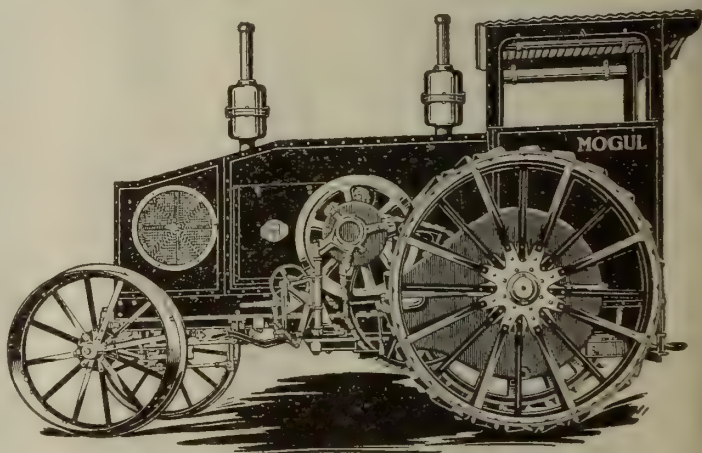
4. Provide power for farm work, in the field or at the belt, at the lowest possible cost.

Do heavy work. If a tractor is to do heavy work, it must be properly designed and carefully built of high-grade materials. The design of Mogul kerosene tractors has stood the test of years. Mogul tractors are built with two drive wheels and two front wheels—nothing freakish or experimental about them. Every part from motor to drive wheels is built for heavy duty and of the best materials experience has shown adapted to the different parts.

Save man labor. A Mogul operator controls two to three times as much power as he could manage in the shape of horses. Because of this fact he is able to do the work of two or three men and thus reduce the hired help.

Can plow deep. Deep plowing with horses during hot weather is practically out of the question. Deep plowing (6 to 10 inches), and proper seed bed preparation at the right time of the year by Mogul kerosene tractors will pay you a big profit on your investment.

Low-cost power. The fuel bill is the big item of tractor expense. Years ago the designers of Mogul tractors began to work on the many problems of building a successful kerosene tractor. They succeeded. Mogul kerosene tractors operate on kerosene, distillate and other fuels as successfully as other tractors do on gasoline. No special mixers or attachments are necessary. Mogul tractors are designed, built and perfected to use low-priced fuel successfully. The wide spread in the prices between kerosene and gasoline shows that Mogul kerosene power costs only about half as much as gasoline tractor power.



Mogul 12-25 Kerosene Tractor

You play safe when you buy a Mogul because you can use any fuel—the cheapest or the most convenient to get. A postal card will bring you more detailed information. Write for our free book, **FARM POWER**.

Insist on repairs made by the company that made your machines



Get Your Repairs Early

Ask for the Reliable Repair Parts—those Made by the Company that Made Your Machine.

Look for the IHC trade-mark. Be sure the repairs you get for your I H C machines have the IHC trade-mark stamped on them. Only genuine parts, made in the same factory, of the same high-grade materials, and by the same men as original parts have the IHC trade-mark stamped on them. They will fit. They will last. They will satisfy you.



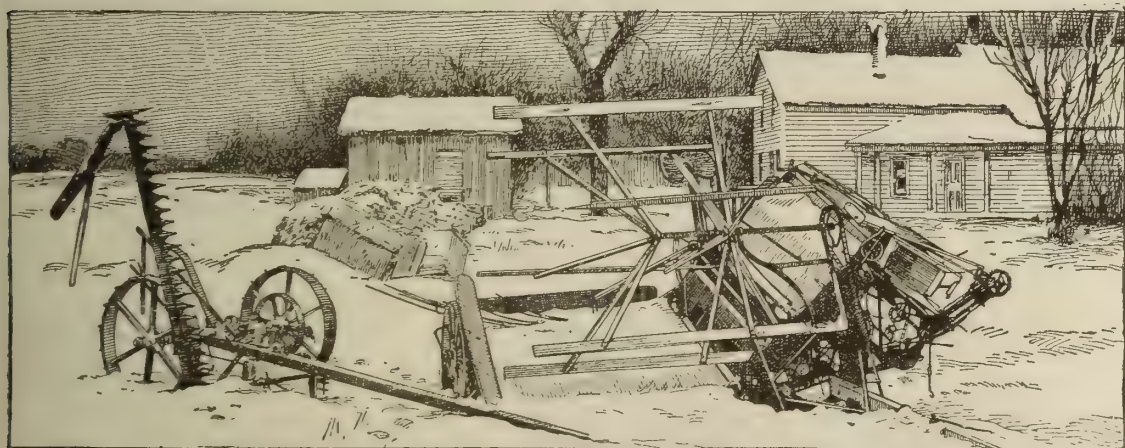
Be sure that the repair parts you buy carry the trade-mark. It guarantees an accurate fit

Why should you take the risk? If your dealer has not repairs bearing the IHC trade-mark, it is his own fault. He can get them. If you buy the inferior parts, you are taking the risk of losing more time and more money.

Buying cheap repairs for your machines is no more reasonable than it is to feed your work horses on wheat straw instead of good clover hay and grain, and expect them to do your hard work.

Order your repairs by number. Get the number from the original part, or from the direction papers. If the part is lost, describe it fully, telling where it goes, giving the name and size of the machine, also year purchased.

Have your I H C dealer order for you. No doubt your I H C dealer has the part you want. If he does not, he can get it very quickly from one of the eighty-eight I H C branch houses.



No doubt the blue sky machine shed and bogus repair parts have cost many a man more in lost time and lost crops than the original cost of the machine. Give your machine the same consideration you do your horses if you expect the best service

Analysis of Manure

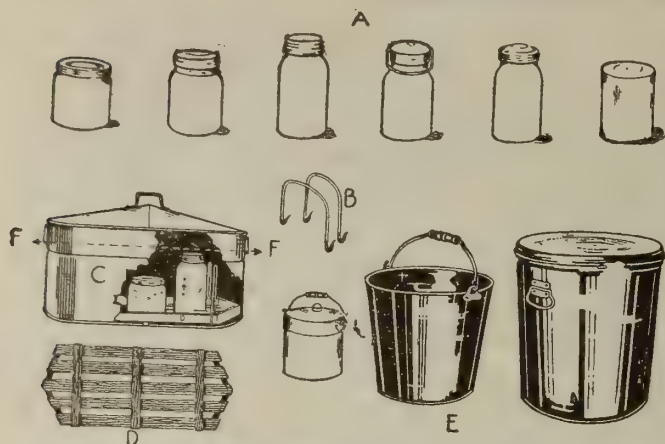
Kind of Manure	Per Cent Water	Pound per Ton			
		Nitrogen	Phosphorus	Potash	Dry Matter
Fresh Barnyard Manure.....	75	10	2	8	500
*Rotted Barnyard Manure...	75	10	3	8	500
Fresh Horse Manure.....	67	11.5	2.4	9.6	660
Fresh Hog Manure.....	77	16	8	6	460
Fresh Sheep Manure.....	30	28	8	19	1400
Fresh Cow Manure.....	77	8.4	5.8	8.8	450
Fresh Chicken Manure.....	57.5	27.22	10.6	11.6	840

*It requires two tons of fresh manure to make one ton of rotted manure.



Hours are dollars in haying time—use Deering or McCormick haying tools and save time

Cold Pack Canning



Use What Equipment You May Have
A, various kinds of jars; B, wire hooks for lifting rack or tray D out of hot water; C wash boiler; D, rack made of lath or light boards; E, different kinds of pails that may be used in the sterilizing.

the cooking process begins. This is best done by placing the vegetables in a cloth sack or crate, which is to be lowered entirely under water. The purpose is (1) to eliminate acids and bitter substances from the fruit or vegetable, (2) to harden tissue, and (3) to set color. Vegetables softened and shrunk by blanching, pack more closely in the jars.

Cold Dip. By this is meant the rapid cooling of the fruit or vegetable in cold water immediately after it has been scalded or blanched. The cold dip helps (1) to separate skin from pulp, (2) to set color bodies, and (3) to render packing easier.



By using the thumb and little finger to screw down the cover, you will not get it too tight for the sterilizing process.

order to keep. Add salt and sugar to suit taste and hot water to vegetables; hot syrup to fruits.

Sixth—Use only good rubbers that fit. With Mason jars, screw the cover down until it catches, then turn a quarter of a round back, use thumb and

Cold Pack. By cold pack is meant the method of canning in which the can is filled with uncooked or blanched food, which is then sterilized in the can. This is in contrast to the old method of cooking food in an open kettle on top of the stove and then putting it into a can and sealing it.

Scalding. To dip a fruit or a vegetable in boiling water in order (1) to remove the skin without loss of pulp. (2) to eliminate acids, and (3) to arrest flow of coloring matter.

Blanching. To boil quickly in water for a brief time before

Sterilizing. To boil fruit or vegetables for a certain period after the container has been completely sealed. This is sometimes called processing.

Processing. (Used for sterilization, cooking or boiling. These expressions may all mean the same thing). To completely destroy all bacteria, spores, germs, and the like, in hermetically sealed cans and packages, by hot water, steam, or steam pressure.

Suggestions for Using the Cold Pack Method.

First—Select fresh, ripe, firm fruit or vegetables.

Second—Grade for ripeness, size and quality. Wash thoroughly and prepare—trim or peel, etc.

Third—Blanch (dip in boiling water then in cold water), or scald (both meaning practically the same). Blanch beans, corn, beets, etc., to drive out harmful acids; scald tomatoes to loosen skin.

Fourth—Dip quickly in cold water. This is absolutely necessary with the vegetables, and it also makes handling easier.

Fifth—The cans should be hot, the rubbers and tops ready. Now pack the fruit or vegetables carefully in the cans. Cans do not need to be full in



little finger as shown in illustration. Covers should be loose to relieve the pressure inside of jar.

Seventh—Sterilize in a wash boiler, if you do not have a regular outfit. Fill with hot water to one inch over top of cans, and boil hard just the length of time given in the time table below. Count time when water begins to boil. Put a rack of lath or perforated board under cans in boiler.

Eighth—Lift cans out carefully, tighten covers, and set away to cool.

Time Table for Scalding, Blanching and Processing

NOTE.—For altitudes of 4,000 feet or more above sea level, add about 20 or 25 per cent more time to this schedule.	Scald or Blanch Minutes	TYPES OF CANNING OUTFITS			
		Hot Water Bath HomeMade Outfits at 212° Minutes	Water-Seal Outfits Above 212° Minutes	Steam Pressure 5 to 10 Lbs. Minutes	Pressure Cooker, 10 to 20 Lbs. Minutes
Apricots, Blackberries, Blueberries, Cherries (sweet or sour), Dewberries, Grapes, Peaches, Plums, Raspberries, Strawberries, Cranberries, Currants, Gooseberries, Rhubarb (blanch before paring).....	1 to 2	16	12	10	5
Apples, Figs.....	20	20	12	8	6
Pears.....	1½	20	12	8	6
Pineapple.....	10	30	25	25	18
Quince.....	6	40	30	25	20
Tomatoes.....	1 to 2	22	18	15	10
Tomatoes and Corn.....	T 2 C 15	90	75	60	45
Egg Plant.....	3	60	45	45	30
Corn on Cob or cut off.....	5 to 15	180	90	60	35
Pumpkin, Squash.....	10	60	50	40	35
Asparagus, Brussels Sprouts, Cauliflower, Dandelion, Spinach...	10 to 20	90	60	50	25
All Other Greens, Sauerkraut...	10 to 20	90	75	60	35
Beans (lima or string), Hominy, Okra, Peas.....	5	120	90	60	40
Beets, Carrots, Sweet Potatoes, Other Roots and Tubers, such as Parsnips, Turnips, Etc.....	6	90	75	60	35

Fruit Syrups

All syrups may be made in the same proportion, the difference in density depending on the length of time they are cooked. Heat slowly and stir syrups until the sugar is dissolved but not afterwards.

Proportion—3 parts sugar to 2 parts water, by measure will make:

Thin Syrup—A little more than 3½ pints.

Medium Thin Syrup—A little more than 3 pints.

Medium Thick Syrup—A little more than 2½ pints.

Thick Syrup—About 2 pints.

Thin Syrup—Sugar simply dissolved; bring to boil. Use when you do not wish product sweet.

Medium Thin—Begins to be sticky. Use this for canning cherries, black raspberries, goosberries, peaches, and plums.

Medium Thick—Catches over edge of spoon. Use this for strawberries, red raspberries, other delicate fruits, and extremely sour fruits.

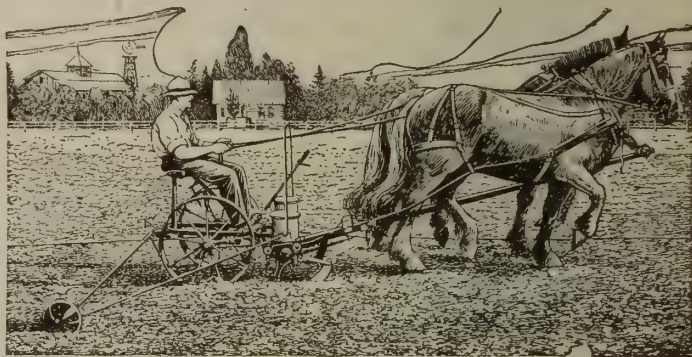
Thick Syrup—Will hardly pour. This is for sun perserves, jellies, jams etc. Syrups should be heated when they are to be used.



It isn't necessary to stop a tractor because the day is hot

Make Your Cornfields Pay a Profit

Most of the benefits of your efforts in grading and testing seed corn can be lost by the use of an uncertain corn planter. The most valuable of all crops — corn — depends largely upon the accuracy and efficiency of the planter. Don't guess—don't experiment—don't run any risk. Use an International corn planter and plant your corn as you want it done—two, three or four kernels in a hill and rows from 28 to 44 inches apart. The International planters are light, simple, and easily operated under all field conditions.



Use good seed and plant it right



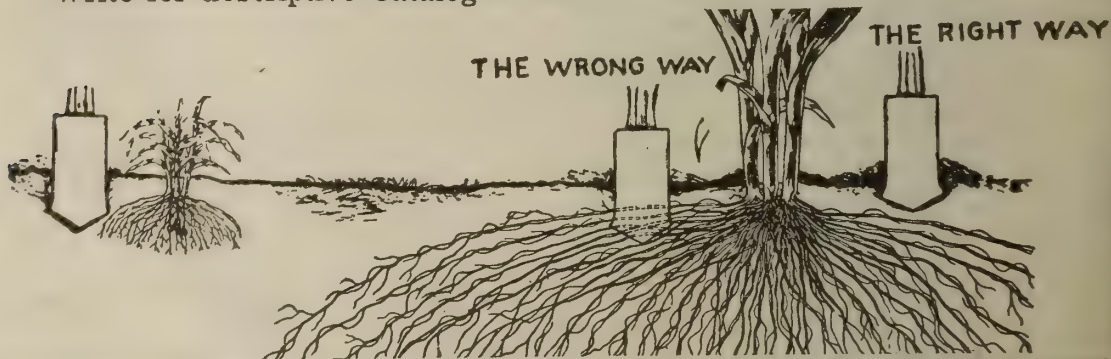
Thorough cultivation

There is a right way to cultivate corn—and there is a wrong way. When the corn is small, the shovels should stir the soil thoroughly to kill the weeds and form a mulch. Later, when the tiny corn roots interlace the ground, the gangs should merely stir the surface soil. The International cultivator is provided with an adjustment to set the shovels at any desired depth. The gangs swing with a parallel movement so that each shovel goes its full width. A boy can operate an Oliver or an International cultivator.

Whether you prefer ensilage or shredded stover you will want to use a corn binder to harvest your crop. The Deering and McCormick corn binders are built by the same men and in the same factories as the same old reliable lines of grain binders. They are light running, easily handled, and do clean work. Not only the straight stalks but the bent and tangled ones are bound into bundles. Bundle elevators can be obtained.

As a dry roughage few feeds excel shredded corn stover. Many farmers are raising alfalfa and clover hay for market but are feeding corn stalks run through a Deering or McCormick husker and shredder.

Write for descriptive Catalog of our corn machines.



Cultivate corn deep when it is small; cultivate it shallow when the roots have spread so as not to injure them.



Pointers on Concrete for the Farm

The sand, stone, or gravel, used in concrete must be free from vegetable matter, clay, or other foreign substances.

Never use bank-run gravel, unless the sand is separated from the pebbles by screening through a $\frac{1}{4}$ -inch screen.

For small concrete products, such as drain tile, fence-posts, etc., the coarse crushed rock should range in size from $\frac{1}{2}$ -inch to $\frac{1}{4}$ -inch, while from $1\frac{1}{2}$ to $\frac{1}{4}$ is best for larger work, such as silos, barn floors, foundations, etc.

The sand should be coarse, hard, and clean, and graded from $\frac{1}{4}$ -inch to fine, most of it being the large size.

Helps for Hand Mixing: The expression 1:2:4 means, one part cement, two parts sand, four parts gravel or crushed stone.

Size of measuring box for sand should be 2 feet square by 1 foot high (4 cubic feet).

Fill measuring box with sand, lift box, and spread sand 4 inches thick.

Take two bags of cement, place contents as evenly as possible over sand.

Turn the sand and cement over until thoroughly mixed, so that no streaks of cement or sand appear.

Spread the mixture of sand and cement out carefully; add two boxes of stone and mix thoroughly.

Add three-quarters of required amount of water slowly and evenly, at same time mixing the mass, add balance of water when dry spots appear, turn mass over three or four times.

Thickness of Walls: It is impossible to give any hard and fast rule for thickness of walls. The following show universal practice:

4-inch walls for light work (troughs, etc.).

6-inch walls for silos, etc.

8-inch walls for barns and houses, (one story).

12-inch walls for light foundations.

1:2:3 Mixture used for concrete roof slabs, one-course concrete road, one-course walks and barnyard pavements, one-course concrete floors, fence posts, watering troughs and tanks.

1:2:4 Mixture used for reinforced concrete walls, floors, beams, columns, grain bins, and other concrete members designed in combination with steel reinforcing.

1:2 $\frac{1}{2}$:4 Mixture used for building walls above foundation, where stucco finish will not be applied. Manure pits, dipping vats, hog wallows, feeding floors, backing of concrete block, etc.

1:1 $\frac{1}{2}$ Mixture used for inside plastering of water tanks, silos, and bins.

1:2 Mixture used for facing blocks and similar cement products.

1:3 Mixture used for concrete brick, drain tile and pipe when coarse aggregate is not used. Ornamental products.

Feeding Dairy Cows

The safe rule is to feed according to the needs of the cows. Study each cow and find out how much feed she can take care of without laying on flesh and how she responds to the feeding of wheat bran, oil meal, etc. The following are suggestive rations:

35 lbs. corn silage, 5 lbs. mixed hay, 5 lbs. wheat bran, 2 lbs. each of oil meal, gluten meal and hominy meal.—New Jersey Experiment Station.

30 lbs. silage, 8 lbs. corn fodder, 6 lbs. cowpea hay, 3 lbs. bran, 2 lbs. gluten meal.—Maryland Experiment Station.

40 lbs. corn silage, 10 lbs. prairie hay or millet, 4 $\frac{1}{4}$ lbs. bran, 3 lbs. cottonseed meal.—Kansas Experiment Station.

(1)—40 lbs. corn silage, 10 lbs. cottonseed hulls, 5 lbs. cottonseed meal.

(2)—40 lbs. corn silage, 15 lbs. cowpea vine hay.—North Carolina Experiment Station.

40 lbs. corn silage, 15 lbs. cowpea hay, 5 lbs. bran.—Ga. Exp. Station.



Every clod in your field takes a toll from your harvest

Wagons That Give Service on Canadian Farms

Did you ever think of the hard, strenuous work farm wagons are called on to do? They have to carry heavy loads over all kinds of roads and at varying rates of speed. The chuck-holes, ruts, stones, etc., all go to put severe and trying strains on a wagon. On second thought, it is little short of remarkable that any wagon can stand up and give service. In fact, the way that they meet all these conditions and the degree of service they give determines the difference in wagons. From this it is easy to see that wagon service depends on the design, the materials and the workmanship.

Let us take the building of the gears as an illustration. Special attention must be paid to the selecting and seasoning of the timber to give the proper strength and endurance. The other gear parts must be made amply large and sufficiently strong to carry their part of these heavy loads. They must also be properly braced, thoroughly ironed, and so placed as to make the whole construction substantial and serviceable.

These features are all embodied in Deering, McCormick, Chatham and Petrolia wagons and tracks. That is why they are so well suited to the conditions on Canadian farms. **Ask your I H C dealer to show you one of these wagons or trucks.**

Treat Your Wheat for Smut

Thousands of dollars worth of wheat is lost every year because of the disease known as stinking smut or bunt. In nearly every case the formaldehyde treatment, if properly conducted, would successfully eradicate this disease. Team work is necessary so that all of the farmers in the neighborhood will treat their seed grain for smut, because the spores will travel with the wind, and nullify the good work of the man who treats through the carelessness of the man who does not.

It is generally conceded that one pint of full strength formaldehyde (formalin) in thirty gallons of water is about the right proportion.

These Two Methods are Most Successful

The Sprinkling Method. Place the grain to be treated on a clean wagon canvas or a clean floor. With an ordinary sprinkler wet the grain with this solution, shovel it over until thoroughly saturated so that the grain will pack in the hand. Cover it with clean sacks, blankets or another canvas, which have been wet with the solution. Leave covered for at least two hours; overnight is all right.

Dipping Method. Put half bushel or so of grain in a gunny sack and dip in barrel of solution, for five minutes. Drain it well and set out to dry.

The first method is the more popular, but there is danger of not getting all of the grain thoroughly moistened.

Germinating Table of Garden Seeds

	Days		Days
Bean.....	5-10	Lettuce.....	6- 8
Beet.....	7-10	Onion.....	7-10
Cabbage.....	5-10	Pea.....	6-10
Carrot.....	12-18	Parsnip.....	10-20
Cauliflower.....	5-10	Pepper.....	9-14
Celery.....	10-20	Radish.....	3- 6
Corn.....	5- 8	Salsify.....	7-12
Cucumber.....	6-10	Tomato.....	6-12
Endive.....	5-10	Turnip.....	4- 8



Quality and Price

The statement, "Buyers are price-mad" while not literally true shows the tendency of the average buyer. He is under the delusion that there may be a dollar's worth of service in an 80-cent article. No idea was ever more erroneous: quality and service are the main stays of price. In fact, the price can be made low only at a sacrifice of either quality on service, or both—you always get what you pay for. The much used expression, "The cheapest is the dearest in the long run" comes as a result of universal experience with "Made to Sell" goods.

A bargain for the other fellow. Did you ever stop to think that the bargain hunter is himself a "bargain for the other fellow." He is usually sold twice—once when he buys, again when he uses the article. If the buyer knew as much about the quality of the materials in the article as the other fellow he would not consider it a bargain. For instance, a horse that has the age and appearance of being worth \$200 may be offered for sale for \$150. Why should there be a 25% reduction? The analysis of the whole thing is—the other fellow knows more about the horse than the buyer. The condition of the horse may be all right, but he kicks or runs away or balks. Hence his quality—his service is worth less. He is worth less by a big margin—he is dear at any price. The buyer is in reality the other fellow's bargain. He is an easy catch. He swallows a low-priced bait, hook and all.

Quality means service. The buyer of farm machines should remember that there is a vast difference between woods, steels, treatments of materials, and quality of workmanship. A \$50 wagon may have the general appearance of a high-class quality-built wagon. The buyer should not stop with appearance, but should base his purchase alone on quality. Quality goods endure, while bargain goods fade under the pressure of service. A willingness to pay the price of quality is a safeguard to greatest service.

I H C machines are quality made; service and endurance are forged into every machine. Demand I H C machines—make quality your standard.

Rules For Calculating Speed of Pulleys

I. The diameter of the driver and driven being given, to find the number of revolutions of the driven: **Rule,** Multiply the diameter of the driver by its number of revolutions, and divide the product by the diameter of the driven; the quotient will be the number of revolutions.

Example: Driver 24 inches in diameter makes 125 revolutions per minute; driven 8 inches in diameter. Find revolutions per minute.

$$\frac{24 \times 125}{8} = 375 \text{ revolutions per minute.}$$

II. The diameter and the revolutions of the driver being given to find the diameter of the driven, that shall make any given number of revolutions in the same time: **Rule,** Multiply the diameter of the driver by its number of revolutions, and divide the product by the number of revolutions of the driven; the quotient will be its diameter.

Example: Find diameter of driven pulley in the above example.

$$\frac{24 \times 125}{375} = 8 \text{ inches in diameter.}$$

III. To ascertain the size of the driver: **Rule,** Multiply the diameter of the driven by the number of revolutions you wish to make, and divide the product by the revolutions of the driver; the quotient will be the size of the driver.

Amount of Barbed Wire Required for Fences

1 Side of square mile (single wire)...	320 lbs.	100 Rods.....	100 lbs.
1 Rod in length.....	1 lb.	100 Feet.....	6 ¹ / ₁₆ lbs.



Turn down grease cups often. Grease is cheaper than repairs

Helps for Measuring and Estimating

Measuring Corn. A bushel of well settled ear corn contains 3888 cubic inches. To find the number of bushels of corn in a crib it is therefore necessary merely to multiply together the length, width and height in inches and divide the product by 3888. If the sides of the crib are slanting, it will be necessary to multiply together one-half the sum of the top and bottom widths, the height and length.

Estimating Hay. As hay is often sold in the mow or stack where it is impossible to obtain its weight, a rule for estimating weight is often very convenient. As the weight varies according to the kind of hay, the time of cutting, length of time in mow, position in mow, etc., an approximate estimate is the best that can be made. The space required for a ton varies—343 cubic feet—7 x 7 x 7—for Western prairie hay cut at the right time and well settled; while 512 cubic feet—8 x 8 x 8—is used for clover and timothy well settled.

Grain Estimates. A wagon box ten feet long, three feet wide and 24 inches deep will hold 24 bushels of loose ear corn, or 48 bushels of shell corn or grain. A bushel of loose ear corn occupies about two and a half cu. ft.

A crib 10 feet wide, 10 feet high and 16 feet long will hold 711 bushels of ear corn. Of ear corn well settled in the crib, one bushel is contained in two and a quarter cubic feet. In figuring shelled corn and grain, the same space will hold one and four-fifths times as much grain as it will of well settled ear corn. A crib that will hold 800 bushels of ear corn will hold of shelled corn or other grain 1,440 bushels.

Weights for Barn Use. Frequently you may wish to use a given weight of this, that or the other feed and have no scales at hand to weigh it. If you have a quart measure handy, you can use it to measure out the required weight. The quart weight of various feeds is as follows:

Cottonseed meal.....	1.5 pounds	Wheat, middling fine.....	1.1 pounds
Linseed meal, old process.	1.1 "	Mixed wheat feed.....	.6 "
Gluten meal.....	1.7 "	Cornmeal.....	1.5 "
Gluten feed.....	1.2 "	Oats.....	1.2 "
Wheat bran, coarse.....	.5 "	Rye bran.....	.6 "

Suggestions for Cooking Potatoes

Baking and steaming are the best methods of cooking potatoes. Steaming is more economical of fuel. Do not bake potatoes in a slow oven.

Losses in Cooking: The nutritive matter is lost by (1) paring and by thus exposing soluble portions to the action of water, (2) in soaking before cooking; (3) starting to cook in cold water.

Twice as much nutritive matter is lost if paring is done before boiling as there is if it is done after boiling. Since the juices of the potato contain 85 per cent of the protein and 85 per cent of the ash, these substances are easily extracted without the protection of the skin.

Experiments show that a pared potato soaked from three to five hours loses about three times as much of its mineral matter and seven times as much of its protein as one that is pared and put on to cook immediately.

When potatoes are cooked in the most wasteful method (skins removed, potatoes soaked, cooking started in cold water), the loss of protein is 51 per cent and that of ash is 39 per cent. When cooked by the least wasteful method (skins not removed, potatoes not soaked, cooking started in boiling water), the loss of protein is only 1.6 and that of ash only 4.9 per cent.

Measurements of Cisterns

To Measure the Contents of Cisterns. To ascertain the contents of circular cisterns, multiply the square of the diameter in feet by the depth in feet and that product by $\frac{37.3}{4000}$ for the contents in hogsheads, or by $\frac{37.3}{2000}$ for barrels, or $5\frac{7}{8}$ for the contents in gallons. (U. S.)

*Gold never sells at brass values. Think of this
when buying farm machines*

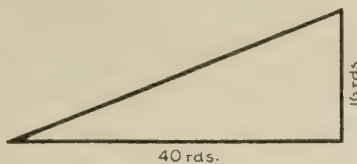


How to Measure Land

To find the number of acres in any rectangular piece of land, multiply the length and breadth in rods together, and divide by 160 (the number of square rods in an acre), and the result will be the required answer.

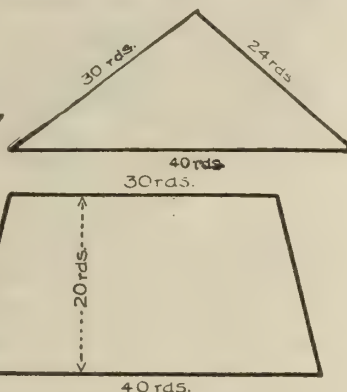
When one side of a triangle and the perpendicular to that side from the opposite angle are given, take one-half the product of the side and perpendicular, and divide by 160.

Example: $(40 \times 16) \div 2 = 320$; $320 \div 160 = 2$ Acres.



To find the area of a triangle when three sides are given, subtract from half the sum of the three sides each side separately; multiply the half sum and the three remainders together, extract the square root of the product and divide by 160. This will give the number of acres in the field.

Example: $30 + 24 + 40 = 94$; $94 \div 2 = 47$
 $47 - 30 = 17$; $47 - 24 = 23$; $47 - 40 = 7$
 $17 \times 23 \times 7 = 2667$; The sq. root of 2667 = 51.64
 $51.64 \div 160 = 0.32275$ Acres.



When the piece of land is in the shape of a trapezoid, multiply one-half the sum of the parallel sides by the perpendicular between those sides and divide by 160.

Example: $30 + 40 = 70$; $70 \div 2 = 35$;
 $35 \times 20 = 700$; $700 \div 160 = 4\frac{3}{8}$ Acres.

In general, the parts into which the field can be most conveniently divided will be triangles, but in some cases we may have a rectangle or a trapezoid, whose areas may be found by the preceding rules.

Grind Your Own Feed

Whether you are buying ground feed or feeding whole grain using a Vessot feed grinder will make a saving for you. Ground feed will enable you to market the steers and hogs in less time, give you more milk from the cows, and more work from your horses for the cost of feed they get.

Vessot feed grinders stand in a class by themselves. They are well known for the service they give and the high quality of work they do. Vessot grinders are unexcelled for grinding barley, corn, oats, wheat, peas, buckwheat, flax and other mixed grains.

Made to Give Satisfaction: These grinders are light running. The highest grade of materials are used throughout. Each part is accurately balanced on a tapered grinding shaft. They are equipped with handy lever release, brass friction end thrust block and carefully balanced plates. Look for the "SV" stamp on the genuine.



Get the most out of your feed by grinding it.

Made in Sizes to Suit Conditions: Vessot feed grinders are made in the following sizes:

Farm Grinders—6½, 8, 9, 9¼, 10½ and 11 inches.

Mill Grinders—11, 13 and 15-in.

The 6½ inch grinders are easily operated by a 2½ H. P. Mogul or Titan engine. A postal card will bring you more complete information.



Do Your Own Threshing and Save Money

How often in your experience has the price of grain touched high water mark for the year while your grain was still in the shock? How many times have you lost the price of an individual threshing outfit, while waiting for your turn with the thresherman?

Be Your Own Thresherman. A New Racine or Goodison outfit makes every farmer his own thresherman. You can thresh as soon as your grain is seasoned, market the grain when the price is right, and get your fall plowing out of the way that much sooner, when you own a New Racine or Goodison thresher. Yes, and save money on the threshing besides.



You can thresh when you are ready with an outfit like this.

The New Racine Thresher (20x32), is just the right size for the individual farmer. It can be operated with either a Mogul 8-16 or Titan 10-20 tractor, or a combination outfit can be had consisting of a thresher and an International Harvester engine mounted on the same truck.

If you need a larger outfit, you will want to investigate the Aultman Taylor, Buffalo Pitts, Goodison and New Racine threshers. They are made in large sizes to do good work and to handle large quantities of grain in a short time.

Any of these threshers, whether large or small, makes a dependable and profitable outfit when combined with a Mogul or Titan kerosene tractor or engine.

For information about details of construction, quality of work, steadiness of operation, special equipment, etc., see our descriptive catalog on threshers which will be sent to you on request.

Poisoning Rats

The use of poison is the best and quickest way to get rid of rats. Care is necessary in putting out poison of any kind in order to prevent loss of other forms of animal life. The poisons most commonly used are strychnine arsenic and barium carbonate. The barium carbonate is probably the best, as it is cheap and has neither taste nor smell. The poison may be given by mixing it with any material that the rat will eat. A convenient way to give the poison is to take 4 parts of cornmeal or flour, 1 part of barium carbonate and sufficient water to make a stiff dough. A small amount of brown sugar may be added. Place this mixture in the runs where chickens and dogs will not get it. Oatmeal is a very good material to mix the poison with. It may also be mixed with butter and spread on bread.

Hawks and owls are among the most active of the natural enemies of the rat. One pair of "monkey-faced" or "barn owls" that will make their home in a barn or other farm buildings is worth more to destroy rats and mice than half a dozen dogs and cats.—Dr. L. L. Lewis, Oklahoma A. and M. College.

Usual Distance for Planting Trees

	No. feet each way		No. feet each way
Apples.....	30 to 40	Plum.....	16 to 20
Apples, dwarf.....	10 to 15	Peaches.....	16 to 20
Pears.....	20 to 30	Cherries.....	16 to 25
Pears, dwarf.....	10 to 15	Apricots.....	16 to 20



Eradication of Canadian Thistles

As Canadian thistles are perennial, their eradication is difficult. Because of this every farmer should begin persistently to fight this weed before it spreads over his entire farm. The success of the various methods of eradication depends a great deal on the season. The following methods are said to be successful according to H. L. Bolley:

First Method: Thistles in small patches. Ground should be spaded up and every particle of the underground stems removed and burned. The patch should be carefully watched and cultivated frequently.

Second Method: Small areas may be smothered out by covering with tar paper after cutting off the thistles in late June or early July. Tack the tar paper down closely with wooden pins, or by means of dirt or stones, to exclude all light. Straw or coarse manure piled two or three feet deep upon the thistles after cutting them close to the ground in mid July will serve a similar purpose.

Third Method: In case of large areas, plant corn, potatoes, or some other crop which demands intense cultivation. If the ground is thoroughly worked and all scattering thistles hoed out, by the end of two seasons of such cultivation the thistles should all be gone. If any of the plants are allowed to produce green leaves, they will furnish nourishment to the underground root stalks, and thus keep the root stalks alive.

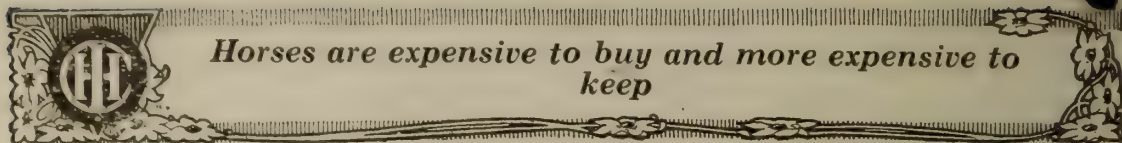
Forth Method: In regions where the ground is fertile and the rainfall heavy, a very thick seeding of milo or fodder corn sowed broadcast will help materially in killing off Canadian thistles.

Fifth Method: Summer fallowing is a very effective way of reducing the thistles provided the ground is kept bare. The cultivation should be often enough so as to prevent any of the thistles from putting forth leaves.

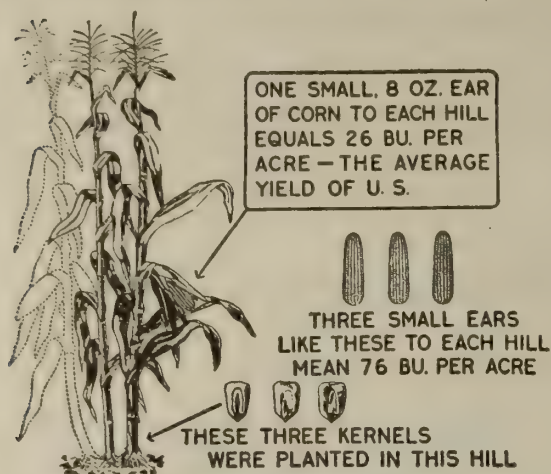
Eradication of Sow Thistles

Remember that a small patch of perennial sow thistles, if allowed to mature, may seed down a whole neighborhood. All small patches should be destroyed as soon as possible. The general methods of destroying sow thistles are crop rotation, smothering, by using hoed or cultivated crops, by summer fallowing, and by digging out by hand.

According to Professor Zavitz, one very good method of eradicating the sow thistle is as follows: Plant the field to a grain crop. As soon as harvested, plow the land and give it frequent cultivation to the first or middle of September, then sow to winter rye at the rate of about two bushels per acre. This may be pastured the following spring, or cut for hay or grain. Sow the land immediately to rape, turnips, or buckwheat. The advantage of this system is that three crops may be harvested in two years and the sow thistle fought at the same time.



Horses are expensive to buy and more expensive to keep



This average hill of corn shows one stalk is missing and that one is barren. Testing and selecting seed corn will greatly help to prevent this condition.

Poor Seed Greatest Cause of Low Yield of Corn

Poor seed means a poor stand, missing hills and weak stalks, producing little or nothing.

It means less than 30 bushels per acre instead of 60.

It means that we produce on an average just one small ear to each hill instead of 2 or 3.

It means wasted land and wasted labor.

Facts Worth Knowing

Weights, measures, etc., in this collection vary somewhat, but they are accurate enough for the majority of problems on the farm.

Atmospheric pressure equals 14.7 pounds per square inch, also equals 33.947 feet head of water.

1 cubic foot of water weighs 62.4 pounds.

12.4 cubic feet of air weigh 1 pound.

1 barrel contains 31½ gallons—kerosene barrel 50 gal. (U. S.)

1 cubic foot contains 7.48 gallons. (U. S.)

1 gallon of water weighs about 8½ pounds.

1 pint of water weighs about 1 pound.

Concrete weighs about 144 pounds per cubic foot.

Sand weighs about 90 to 110 pounds per cubic foot.

Broken stone weighs from 90 to 110 pounds per cubic foot.

17 cubic feet of clay weigh about 1 ton.

18 cubic feet of gravel, in bank, weigh about 1 ton.

27 cubic feet of gravel, dry, weigh about 1 ton.

Lime weighs 75 pounds per bushel.

To find circumference of a circle multiply diameter by 3.1416.

To find diameter of a circle multiply circumference by .31831.

To find area of a circle multiply square of diameter by .7854.

To find area of a triangle multiply base by one-half perpendicular height.

To find surface of a ball multiply square of diameter by 3.1416.

To find cubic inches in a ball multiply cube of diameter by .5236.

To find side of an equal square multiply diameter by .8862.

Doubling the diameter of a pipe increases its capacity four times.

To find the pressure in pounds per square inch of a column of water multiply the height of the column in feet by .434.

Steam rising from water at its boiling point (212 degrees) has a pressure equal to the atmosphere (14.7 pounds to the square inch).

Common Names of Chemical Substances

Common salt. Chloride of Sodium
Epsom Salts. Sulphate of Magnesia
Lime. Oxide of Calcium
Soda. Oxide of Sodium
Vinegar. Acetic Acid (diluted)

Blue Vitriol. . . . Sulphate of Copper
Cream of Tartar Nitrate of Potassium
Calomel. Chloride of Mercury
Copperas. Sulphate of Iron.
Water. Oxide of Hydrogen



Top Prices for Hay

Two Dollars More per Ton. Two farmers, neighbors, hauled clover hay to market the same day. Each believed his hay was top quality. Yet when the expert buyer looked the hay over, he offered \$2 a ton more for one load than for the other.

The farmer who was offered the lower price demanded the buyer's reason for what he called unfairness. The two loads of clover were grown in adjacent fields. Why, then, should the buyer offer less for one than for the other?

Save the Leaves. The buyer pointed out the fact that in one load the majority of the leaves still adhered to the stems, while the other many of the leaves had been threshed off in the raking and loading. The leaves are the valuable part of clover and alfalfa hay. Many extra dollars are pocketed every year by farmers who know that McCormick, Deering and International combination side rake and tedder and hay loaders make and handle all kinds of hay without threshing off leaves and blossoms.

Hay is a profitable crop when handled, from cutting to baling, with Deering, McCormick and International mowers, rakes, tedders, combination side delivery rake and tedder, hay loaders, sweep rakes, stackers and hay presses. Any I H C local dealer can show you the features that make I H C haying machines the most profitable for a farmer to buy and use.



Start your haying with an International Harvester mower.

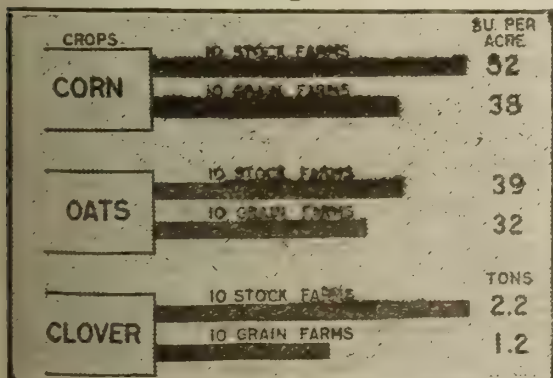
Raise More Stock?

Keep all the stock you can properly care for. Crops fed to live stock return about 80% of their fertilizing value to the soil in shape of manure.

Use only the best sires obtainable. It is poor economy to use inferior animals simply because they are cheap.

Do not neglect your young stock. Stunted animals never bring the highest price no matter how well fed in later life.

Remember that the dairy cow needs good shelter, proper feed and careful attention. Be thoughtful of the welfare of your cows.



This chart shows the average yield of five years of corn, oats and clover on ten stock and ten grain farms in Iowa. Note the greater yield in favor of the stock farms.

Make a study of the silo question. You may find that a silo will be a profitable investment for you.

Alfalfa is one of the very best forage crops. It is high in protein and a good soil builder.

The question of maintenance of soil fertility is important. The keeping of live stock is a big factor in the solution of the problem, provided the manure pile is carefully handled.

Subscribe to some good farm papers and read them carefully. You will obtain good suggestions from the experience of others by so doing.



Drill in Your Small Grain

The biggest grain yields are always obtained from fields in which the seed has been planted evenly, in the right amounts, in firm, compact soil and covered at a uniform depth. These conditions can be brought about only by the use of a good grain drill.

A drilled crop always gets the better start. The grain comes up evenly, it ripe is evenly, and is all ready for harvesting at the same time. Drilling encourages the growth of a strong root system, the best possible protection against drought or a wet season, and the very best assurance of a good crop in a good growing year.

Drilled ground is left in furrows or slight ridges. When these ridges run north and south both sides of the furrows will receive an equal amount of the sun's rays. Besides helping the grain to a good start, north and south drilling best protects the roots of the growing plants from the intense heat of the latter part of the growing season.



Planting the seed at a uniform depth and covering all of it.

In choosing a drill, get one that plants the seed at an even depth, that plants the correct amount in each furrow, and that does not skip, bunch, or choke. A Deering or McCormick drill, sold by your local dealer, will do the most satisfactory work. With any of these drills you have your choice of a variety of furrow openers, a wide range of feeds and many special features. A postal card will bring you **more information.**

Sweet Clover Has a Place on the Average Farm

The value of sweet clover and its importance as a feed and soil builder has not been generally appreciated. No doubt a reason for this is that stock do not eat it readily until they have learned to like it. The number of farmers now using it for pasture has established its value beyond a doubt. The following are some of the advantages of sweet clover:

It is not a weed (as many consider it to be).

Like alfalfa it is rich in protein.

Will not bloat cattle or sheep.

Equal to alfalfa for pasture.

Is a great milk producer.

Furnishes early spring pasture.

Contains more protein than red clover.

Fits well in the crop rotation.

Is a great soil-enriching crop.

Better than any of the common clovers as a green manure crop.

Is a valuable plant for honey bees.

Prepares the soil for alfalfa.

Roots are soft and give no trouble in plowing.

Roots being tender become inoculated more readily than alfalfa.

Never damages cultivated crops.

Its roots decay rapidly, adding much nitrogen and humus to the soil.

Seeds freely in both humid and dry sections.

Sweet clover prevents erosion.

Will grow under conditions where clover and alfalfa fail:

On low, wet soils. On hard, compact soils.

On poor soil, especially where there is lime.

*Fodder left in the shock loses much of its value—
shred and store it*



Information for Builders

Wood and Lumber

A cord of wood contains 128 cubic feet. To ascertain how many cords there are in a pile of wood, multiply the length by the height, and that by the width, and divide the product by 128.

To ascertain the circumference of a tree required to hew a stick of timber of any given number of inches square, divide the given side of the square by 0.225, and the quotient is the circumference required.

Round timber, when squared, loses one-fifth.

To measure round timber, take the girth in inches at both large and small ends, add them, divide by 2, which gives the mean girth; then multiply the length in feet by the square of one-fourth of the mean girth and the product will be the contents in cubic feet. This rule is commonly adopted, and gives four-fifths of the true contents, one-fifth being allowed to the purchaser for waste in sawing.

Covering Capacity of Shingles

Average size of shingles—4x16 inches—is taken as a basis of calculation,

100 sq. ft. will require, laid 4 inches to the weather.....900

100 sq. ft. will require, laid 4½ inches to the weather.....810

100 sq. ft. will require, laid 5 inches to the weather.....720

Three and one-half pounds of four-penny nails are required for laying 1,000 shingles. 5 to 10% should be added to these figures for shortage.

Stone and Brick Walls

A perch of stone is 24.75 cubic feet. When built in the wall, 2¾ cubic feet are allowed for the mortar and filling; hence, 22 cubic feet of stone make one perch of wall.

Masons estimate 3 pecks of lime and 4 bushels of sand to a perch of wall.

To find the number of perches of stone in a wall, multiply together the length, height, and thickness in feet, and divide by 22.

Common bricks are 7¼ to 8 inches long by 4¼ inches wide and 2½ inches thick. Front bricks are ¼ inch longer and wider.

It requires 20 common bricks to lay one cubic foot. In an 8-inch wall 15 common bricks make one foot of wall.

One and one-eighth barrels of lime and ⅝ yard of sand will lay 1,000 common brick.

One mason and helpers (at the rate of 1¼ helpers to each mason) will lay in one day of ten hours, 1,800 to 2,000 common brick.

Stone foundation walls for elevators, etc., should not be less than 16 inches thick. A thinner wall does not bond together well. All foundation walls should be at least 8 inches thicker than that portion of the wall above grade.

Do not use more mortar than necessary, as it is obvious that stone is the stronger of the two materials. Do not lay the stone vertically, but on its natural quarry bed. Otherwise, water will easily penetrate between the layers. For all damp places, cement mortar, or, lime and cement mortar, should be used.

Average Periods of Gestation

The period of gestation in animals varies considerably, but the following is an average period based on a long series of observations:

Ass.....	12 months	Sow.....	4 months
Mare.....	11 months	Bitch.....	9 weeks
Cow.....	9 months	Cat.....	50 days
Sheep.....	21 weeks	Rabbit.....	30 days
Goat.....	21 weeks	Guinea pig.....	65 days



Facts About Textiles Which the Housewife Should Know

Each textile fabric—cotton, linen, wool and silk, has its characteristics, each its definite uses. Because of high prices, there is a temptation to adulterate the materials. There are such skillful ways of adulteration that some cannot be detected except by the use of high-powered microscopes and chemical tests, but the information given below covers only the common test that every housewife should know.

Cotton has short, flat fibres with a spiral twist, thus giving elasticity. Being inexpensive, it is not often adulterated except by the addition of mixtures called sizing—starches, gums, dextrine, glue, china clay, which add largely to the weight but not to the wearing quality. These adulterations may be detected by a feeling of harshness or by reduced weight when washing.

Mercerized cotton is produced by the action of a strong alkali on cotton fibre rinsed under tension. It has a high luster, which it retains after many washings, while the imitation loses its luster with the first washing.

Linen fibre is long, smooth and quite lustrous when spun into a thread. Linen fibres break more unevenly and leave a more pointed end than cotton. The old test of moistening the finger is not always a sure one, as the moisture will not come through a heavy linen, or one heavily starched, and it will come through a sheer, tightly twisted cotton. A better test is to put a drop of olive oil on the cloth and press between blotting papers. The linen becomes more transparent than the cotton. Linen has a peculiar leathery feeling and more luster than cotton.

Wool is very curly. Because of the felting qualities, it is possible to conceal cotton under the surface of woolen cloth. Detection is difficult.

Wool has luster and kinks. The ends of the threads are stiff and wiry.

Silk is frequently known as the fibre of luxury and is commonly adulterated by the use of dyes and metallic salts.

Burning is the simplest test for good silk; a thread of pure silk will burn slowly, leaving as it burns a very small amount of crisp ash in a ball at the end of the thread. Heavily weighted silk burns and leaves the ash in the form of the original thread; this ash of course drops to pieces readily. A very small percent of ash would be left from pure silk.

Clothes that are to be worn constantly need to be of material that will stand frequently cleaning. A close twill weave makes a firm, durable material, while the loose, basket weave gives a lack of firmness. A cloth with a very heavy cross thread or filling and a very fine warp, or vice versa, may split because of the great difference in the strength of the threads.

Tests For Adulteration

1. Examine cloth to see if all threads are alike.
2. Examination of individual threads.

Cotton: short fibers, ends appear fuzzy in thread.

Wool: short fibers, decidedly kinky and stiff.

Silk: long, straight fibers with luster; spun silk, fibers short, thread looks more like cotton and breaks more easily than reeled silk.

Linen: strong threads, high luster; when broken, ends are very uneven.

3. **Burning tests:** (a) cotton burns quickly with flame; (b) wool burns slowly, chars, and gives off odor of burnt feathers; (c) silk burns slowly, leaves small, crisp ash; when weighed, leaves more ash; (d) linen, see cotton.

4. **Linen**, if without much starch, becomes translucent when treated with olive oil; cotton remains opaque.

5. A mixture of cotton and wool, when wet, wrinkles more than pure wool.

6. A careful examination of the finish of the material. Observe if alike on both sides, and if the apparent beauty of the material is due to finish or to good quality of material.—*Bulletin No. 13 University of Illinois.*



Space Required to House Farm Implements and Machines

The space necessary to house farm machines depends very much on how they are arranged. Certain parts may be removed, thus materially reducing the space required. At any rate, as most machines require comparatively small space, why not see that they are all well housed? The following table gives approximate measurements required for different machines in feet.

	Floor Space	Height
Plows —Walking.....	8x 3	3
Sulky and horse gang (add 10 ft. for tongue)...	8x 6	4
Engine gang.....	16x 7	5
Harrows —Spike tooth, per section.....	1x 5	5
Spring tooth, per section.....	5x 4	1½
Single disc, 8 ft. with truck (tongue off).....	6x 9	4
Grain Drills —12x7 (add 10 ft. for tongue).....	5x 8	5
16x7 with press attachment (tongue off)...	7x11	5
Rollers —Smooth.....	3x10	4½
Corrugated, single (add 10 ft. for tongue).....	3x10	4
Corrugated, double.....	4x 8	4
Corn Planter —Two row (add 10 ft. for tongue).....	5½ x6	3½
Cultivators —Walking, one horse.....	7x 2	3½
Riding, single row (add 10 ft. for tongue).....	8x 5	4
Riding, two row (add 10 ft. for tongue)....	8x10	4
Alfalfa (add 10 ft. for tongue).....	7x 6	5
Mower —6 ft. (add 10 ft. for tongue).....	5x 6	7
Binders —Grain, 8 ft. (tongue truck off).....	8x14	7
Grain, 6 ft. (tongue truck off).....	8x12	7
Corn (tongue off; add 11 ft. for tongue).....	13x 6	7
Hay Rakes —Self-dump (thills off).....	5½x11½	5
Side-delivery (tongue off; add 10 ft. for tongue).....	13x 9	5
Tedders —Kicker (add 8 ft. for tongue).....	5½ x8	5
Combination; (see side-delivery rakes).		
Hay Loader —.....	14x 9½	9
Ensilage Cutter —20-ton (tongue off).....	11x 5½	7
Corn Shredder —8 roll.....	20x 8	9
Corn Sheller	20x 8	11
Hay Press	16x 6	6
Thresher —32-inch.....	26x 8	8½
Kerosene Tractor —8-16 H. P.....	12x 6	7
Fanning Mill —24-inch.....	4x3½	5
Wagons —Wagon with top box (tongue off).....	11x5½	6½
Buggies —One seated (thills up).....	8x 5½	7
Two seated (add 10 ft. for tongue).....	10x 5½	8
Grain Dump —(Knocked down).....	12x 4	4
Potato Machinery —Planter (add 9 ft. for tongue).....	5x 3	4
Sprayer, two wheeled barrel (thills off).....	6x 6	5
Digger, wheeled, elevator(tongue off)	13x 4	3
Manure Spreader —50 bu. (add 10 ft. for tongue).....	17x 7	6

How to Measure Lumber

Lumber is measured by the board foot. The dimensions of a board foot are 1 ft. square and 1 inch thick, or its equivalent. To find the board feet in any piece of lumber, multiply the length in feet by the width in feet by the thickness in inches. Example, How many board feet in a 2 x 4, 12 ft. long—12 ft. length, 4 in. or ⅓ ft. width, 2 in. thickness. Then 12 x ⅓ x 2 equals 8 board feet.



A cream separator is as necessary as the kitchen range

A Good Hay Press Means Added Profits

Neat bales of bright, clean hay bring good prices—enough to allow a good profit on the baling. The owner of a good hay press not only makes profit on his own baling, but can do the work for others, and thus establish a fine “side line.” When hay is in the bale, the markets can be watched closely and shipments quickly made when prices are higher, and then, too, less storage space is required and bales are easily and quickly handled.



Good Baled Hay tops the market

With the exception of the one-horse press, all these machines are made with three sizes of bale chambers—14x18-inch; 16x18 inch and 17x22-inch. The horse presses are especially powerful. With the motor press you have a double duty machine. It is not only a fast and efficient baler, but you can use the engine as a portable power plant. The belted-jack press is the two-horse press with a jack instead of the sweep, so that you can use an engine. With an 8 H. P. kerosene engine you can bale as high as 30 tons per day.

There are many reasons why an International press should be one of your farm machines. Ask your I H C dealer or send for our free catalog which shows how these machines **pay their way.**

Treat Your Hogs for Worms

Here is a good remedy: Twice each month let the hogs miss a feed—mornings with hogs fed twice a day—noons with pigs. The evening feed should be a slop, and with it thoroughly mix turpentine as follows: For pigs weighing less than 25 pounds, one-half teaspoonful for each pig; from 25 to about 40 pounds, one teaspoonful; from 40 to 100 pounds, two teaspoonfuls, and for large hogs, a tablespoonful.

The next morning give the same size doze of kerosene, linseed oil, or castor oil; thoroughly mixed with slop for the light physic. This treatment is safe if just reasonable care is taken in preparing it. It is cheap and effective.

The Size of Silo to Build.

No. of Cows	Pounds Required Daily	Size of Silo Needed		
		Diameter Feet	Height Feet	Capacity Tons
6	240	9	20	22
9	360	10	24	34
13	520	10	30	47
15	600	12	26	55
20	800	12	32	74
25	1000	12	38	94
30	1200	14	34	109
35	1400	14	38	128
40	1600	16	34	143
45	1800	16	38	167
50	2000	16	40	180

This table will give you an idea of the size of silo to build. The number of pounds required daily is figured on as basis of 40 pounds for each cow. There are several conditions that control the amount of silage to feed. For suggestive rations see pages 16 and 31.

Suggestions for Preventing Fire

If the shingles are old and mossy on your roofs put on new ones. It is usually difficult to stop a fire in a roof.

See that your chimneys are high enough to carry the sparks away from the roof rather than against it.

Examine your chimneys where the stovepipes enter and see that all wood-work is at least four inches from stovepipes.

Clean out flues and burn out chimneys often when your roofs are wet.

Keep matches in a safe place.

Do not keep ashes in a wooden box in the house or in an outbuilding.

Care should be exercised about leaving a lighted lamp burning in a building.

Be careful where you leave lighted lanterns about the barn.

Avoid smoking about the barn and do not allow others to do so.

Store gasoline well removed from all wooden structures.

Adequate Water Supply—There is no doubt but the prevention of one fire on the average farm would pay for an adequate water supply system, and a great many times over.

Poisoning Gophers

The best time for poisoning gophers is in the early spring as soon as they come out. No doubt the least successful time is during harvest. Early spring poisoning also kills many females, and thus prevents a rapid increase in numbers.

The chief problem in poisoning gophers is securing a satisfactory bait. One of the commonest mixtures which has proved satisfactory against striped gophers, and quite effective against the grey, is made up in the following proportions:

Strychnine.....	1 ounce
Molasses or sugar.....	$\frac{1}{2}$ pound
Wheat.....	1 bushel

The strychnine should be first dissolved in sufficient warm water to soak the grain without leaving a surplus and the grain soaked in it for not less than 24 hours. If to be kept, dry rapidly to prevent souring. When used at once drying is unnecessary. Another mixture is made up of:

Strychnine.....	1 ounce
Saccharine.....	1 teaspoonful
Corn Starch.....	1 cup
Water.....	$1\frac{1}{2}$ pints

Beat thoroughly, then boil to thick starch and pour over one bushel of grain. Dry quickly. A variation of the above, at times very successful, is to use half a cup of salt in place of saccharine. Salt is sought by most animals and gophers are no exception to this rule. For gray gophers meal or even bread is often preferable to whole grain. Another for males is made by mixing:

Strychnine (powdered).....	$\frac{1}{4}$ ounce
Tallow.....	10 pounds
Salt.....	1 ounce

Melt tallow and pour in strychnine and salt. Keep heated for an hour and stir thoroughly until well mixed. Cool in a convenient receptacle and cut into small squares for placing in holes. Yet another idea is to place grain, preferably barley, in a situation to make it sprout, and when the sprouts are about an inch long, pour over a mixture of two ounces of strychnine to one cup of flour made into a thin paste, using one bushel of sprouts.

All these mixtures should be used in sufficient quantity to make one meal for a gopher and should be placed in the holes showing recent signs of being inhabited. The practice of scattering poison promiscuously round about the burrows is not only a wasteful one, but destroys many valuable birds. We must not forget that in strychnine we are handling a dangerous poison alike to man and beast.



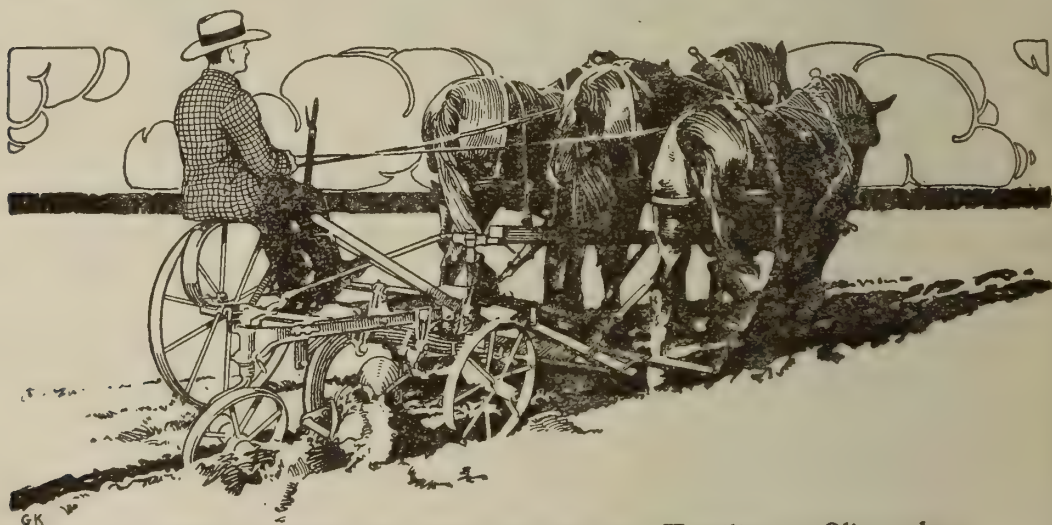
Why borrow harvest troubles by trying to use an inferior brand of twine?

Better Plowing Means Bigger Crops

A field well plowed is a long step in the direction of a profitable crop. There are two important results obtained from plowing—the soil is broken up and its physical condition so changed that the plant roots will find a suitable home, and the moisture is conserved. If a poor job of plowing is done, it is practically impossible to prepare a proper seed bed. Disking and harrowing, are, of course, necessary in preparing a good seed bed, but the benefits of these will only be in proportion to the kind of plowing that has preceded them.

Nowhere is the importance of good plowing more fully understood than on Canadian farms. No matter how good a plowman a man may be, he cannot do good work with an inferior plow. The idea that plows are very much alike often leads to the serious mistake of buying a poor plow. It takes good material, a well equipped factory, skilled workmen, and a great deal of experience to build a satisfactory plow. Hamilton and Oliver plows have back of them all these requirements.

Hamilton and Oliver plows are especially designed and built in Canada to meet the requirements of Canadian farmers. They have strong proper shaped shares and moldboards to do the best work under the varying soil conditions. The shares and moldboards are so designed as to give the lightest possible draft and to enable the operator to handle the plow with ease.



You will be pleased with results if you use a Hamilton or Oliver plow.

As you know, conditions vary a great deal, and for this reason it is necessary to make adjustments. Hamilton and Oliver plows are so built as to give a wide range of adjustments. They have not only the regular adjustments, but also those found lacking in most other plows. To examine these plows is but to convince yourself of their superiority in this respect.

On examining Hamilton and Oliver plows, you will be impressed with the strength, yet the lightness of weight. They are not cumbersome or unusually heavy, as is often the case with other plows. Observe the plows from every standpoint. Note the heavy braces, frogs and standards that support the moldboards. Did you ever see as high quality of materials and reinforcements used on any other plow?

Hamilton and Oliver plows are made in sizes and kinds to suit your needs, whether you desire a walking, sulky, riding gang, walking gang, brush breaker, prairie breaker, combination brush and prairie breaker, or engine gang.

Drop us a post card. We will gladly send you more complete information.



Good Books for Farmers

The Agricultural Extension Department of the International Harvester Company of New Jersey was organized for the purpose of aiding the farmers of every state in solving the problems of the farm. This assistance is extended by conducting agricultural campaigns; by publishing farmers' bulletins and booklets covering practically every phase of farming, Soils, Live-stock, Farm Crops, etc.; by supplying accurate information on agriculture by correspondence to those who ask for it.

Here are a few booklets selected from a large list, printed and distributed by Agricultural Extension Department, Harvester Building, Chicago, U. S. A.

Furnished upon receipt of amounts quoted below. Quantity lots sent transportation charges collect.

NAME	Pages	Single	Six or
		Copies Each	More Each
Getting a Start With Alfalfa in the Corn Belt.....	12	\$.02	\$.01
Getting a Start With Alfalfa in the Northwest.....	32	.02	.01
Hog Cholera.....	12	.02	.01
Humus—The Life of the Soil.....	12	.02	.01
Storing Sweet Potatoes.....	8	.02	.01
Dip the Tick.....	16	.02	.01
A Good Home.....	24	.02	.01
Helps for Wash Day.....	20	.02	.01
Seed Corn—Do You Know That It Will Grow?.....	24	.02	.01
I H C Demonstration Farms in the North.....	32	free	.01
I H C Demonstration Farms in the South.....	32	free	.01
Sweet Clover in the Northwest.....	36	.02	.01
Sweet Clover.....	64	.05	.04
Diversified Farming in the Cotton Belt.....	52	.05	.04
Boll Weevil.....	32	.05	.04
For Better Crops.....	160	.05	.04
For Better Crops in the South.....	100	.05	.04
We Must Feed Ourselves.....	52	.05	.04
The Cow Makes Farming More Profitable.....	50	.06	.05
A Silo On Every Farm.....	52	.10	.06
Binder Twine Industry.....	48	.20	.15
Harvest Scenes of the World.....	150	.50	.35

Write for list of lecture charts and lantern slides, 13 interesting subjects

Eight Pointers on the Care of Lamps

The condition of lamps and wicks is often the cause of poor lights. Heavy oils will gradually accumulate in the bottom of the lamp. For this reason the lamp should be cleaned thoroughly once every month.

Do not put water into the lamp except when cleaning.

The charred portion of the wick should be removed before lighting.

As the wick is a vital part of the lamp, one of good quality should be used. Use new wicks at least every month or two. Dry them thoroughly and put into oil while still warm. If used wicks are dried every two weeks, they give better light. Wicks will gradually become clogged and give poor light. It is poor economy to use old, clogged wicks.

A poor burner or an unsuitable chimney may cause a smoky flame. Both burner and chimney should be kept thoroughly clean.

Oftentimes the impurities contained in kerosene will clog the wick. Kerosene dissolves many substances with which it comes in contact. Poor lights may be traced to improper handling of the oil.

Anti-explosion powders are of very little value and are apt to cause a great deal of annoyance by clogging the wicks.



When tractor power is not used, one fourth of the farm is required to feed the farm horses

Flowers For the Farm Home

Every housewife should have at least a few flowers, but because of the time and extra work involved they are often neglected. It is important that the flowers be of such varieties as to require as little attention and care as possible and at the same time afford an abundance of bloom. For this reason most of the flowers should be perennials—plants that come up year after year.

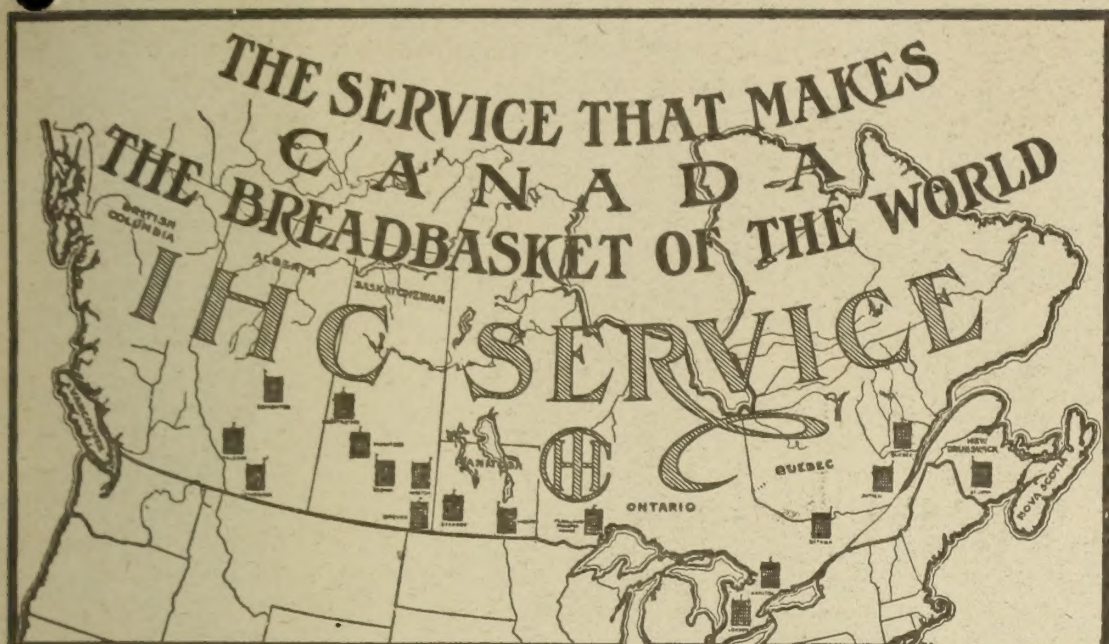
Perennials. Some of the perennials that are easily grown and that will unite to extend their bloom from early spring to late fall are as follows: Snowdrop and snowflake, crocus, tulip, hyacinth, narcissus, polyanthus, English daisy, gaillardia pinks, forget-me-not, peony, bleeding heart, lychnis, columbine, iris, larkspur, poppies, lilies, yucca, gas plant or dictamnus, hollyhock, phlox (improved kinds), certain kinds of sunflowers, golden glow rudbeckia, perennial pea, outdoor chrysanthemums, goldenrods, asters.

Annuals. Some of the most easily grown and satisfactory annuals for the general flower-garden are: China aster, marigold, cornflower or bachelor's button, petunia, verbena, sweet alyssum—cosmos (for late bloom), annual chrysanthemum, zinnia, stock, pansy (for a moist or semi-shady place), nasturtium, sweet sultan, nicotiana (two or three kinds), annual poppies (bloom of short duration), balsam, portulacca or rose moss (for sunny places), sweet pea, morning-glory, hyacinth, bean.

Shrubs. Certain shrubs may be grown primarily for their flowers as well as for their shrub effect, as: "Lilac, syringa or mock-orange, crape myrtle (at the South), deutzias, hydrangea, snowball, spireas, blue spirea or caryopteris, weigela, rose of Sharon, kerria or Japan rose, and various wild bushes of most neighborhoods."—*Bailey's Cyclopaedia of American Agriculture.*

CALENDAR, 1918

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Jan.	6	7	8	9	10	11	12	July	7	8	9	10	11	12	13
	13	14	15	16	17	18	19		14	15	16	17	18	19	20
	20	21	22	23	24	25	26		21	22	23	24	25	26	27
	27	28	29	30	31				28	29	30	31			
Feb.	3	4	5	6	7	8	9	Aug.	4	5	6	7	8	9	10
	10	11	12	13	14	15	16		11	12	13	14	15	16	17
	17	18	19	20	21	22	23		18	19	20	21	22	23	24
	24	25	26	27	28				25	26	27	28	29	30	31
March	3	4	5	6	7	8	9	Sept.	1	2	3	4	5	6	7
	10	11	12	13	14	15	16		8	9	10	11	12	13	14
	17	18	19	20	21	22	23		15	16	17	18	19	20	21
	24	25	26	27	28	29	30		22	23	24	25	26	27	28
	31								29	30					
April	7	8	9	10	11	12	13	Oct.	6	7	8	9	10	11	12
	14	15	16	17	18	19	20		13	14	15	16	17	18	19
	21	22	23	24	25	26	27		20	21	22	23	24	25	26
	28	29	30						27	28	29	30	31		
May	5	6	7	8	9	10	11	Nov.	3	4	5	6	7	8	9
	12	13	14	15	16	17	18		10	11	12	13	14	15	16
	19	20	21	22	23	24	25		17	18	19	20	21	22	23
	26	27	28	29	30	31			24	25	26	27	28	29	30
June	2	3	4	5	6	7	8	Dec.	1	2	3	4	5	6	7
	9	10	11	12	13	14	15		8	9	10	11	12	13	14
	16	17	18	19	20	21	22		15	16	17	18	19	20	21
	23	24	25	26	27	28	29		22	23	24	25	26	27	28
	30								29	30	31				



BRANCH HOUSES

International Harvester Company of Canada, Ltd.

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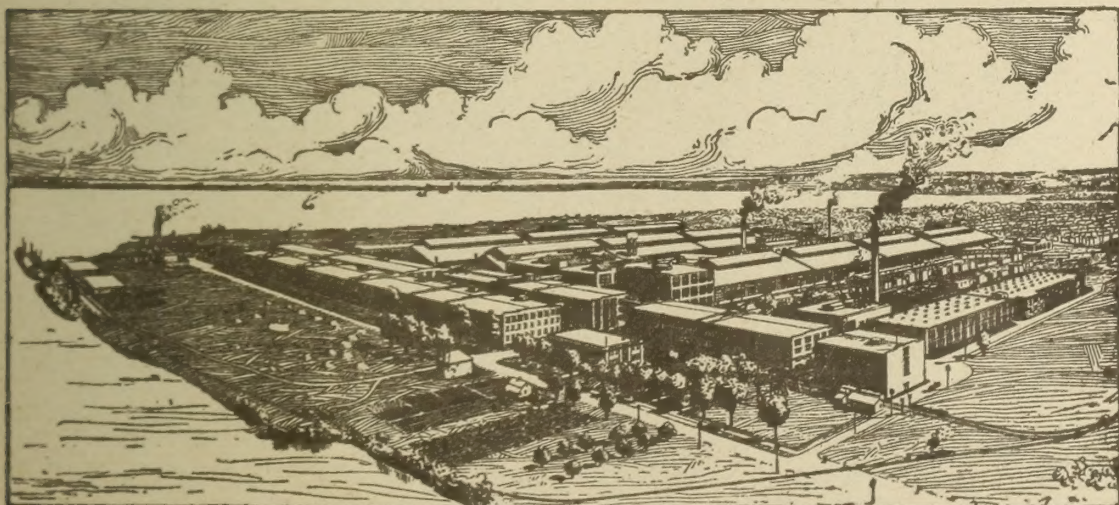
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